

CUSTOMERS SHOPPING EXPERIENCES- A CASE STUDY OF ORGANISED RETAIL SECTOR IN INDIA

B.B. Goyal and Meghna Aggarwa

The retail market in India offers tremendous potential and is growing fast. Today's market place is characterized as "the age of diversity", in which consumers demand and get tremendous variety in the products and services. Owing to these changes, large-scale organized players are fast making inroads replacing traditional stores with modern store formats. However, all these modern retail formats, which are adaptations of Western models, may not necessarily be most suitable here also. This paper is an attempt to explore the shopping experiences of Indian shoppers at organized retail outlets which might explain which activities interests the shoppers most, what are the most attractive attributes of a store and which promotional activities are most productive for these retailers. The findings may provide useful insights to researchers for further research, and to retailers on how to possibly offer differentiated store attributes to shoppers.

Dr. B.B. Goyal is a Reader and Ms. Meghna Aggarwa is a UGC Research Fellow, University Business School, Panjab University, Chandigarh.

Introduction

Retailing, the biggest private-sector industry in the world, is one of the prime movers of an economy. A major driver for formal estate and urban development, it accounts for almost 10 percent of the gross domestic product (GDP) for most of the countries. The industry is also the major employer in most economies- up to 16 percent in the US, 15 percent in Brazil, 12 percent in Poland and 7 percent in China. Specialized retailers, all over the world, are developing rapidly in segments such as consumer durables and white goods, books, music, lifestyle goods, household furnishings, healthcare and beauty.

India is an emerging retail market and its retail sales are increasing by an average of 10 per cent a year and spending on luxury goods is growing at almost double of that figure. Two-thirds of the population is under 35 and this coupled with a 9% plus GDP growth

rate means that the best is yet to come. The globally respected consultancy firm, A.T. Kearney (2004), has rated India as the most attractive emerging retail market for three years in a row. Organized retailers from within and around the globe are on a spree to set up shop in the Indian market. This has intensified the level of competition amongst the players and the Indian consumer has had the opportunity to experience a rapid exposure to brands. The number of working women is increasing in India and it accounts for the considerable increase in disposable income plus rising personal consumption for the dual-income family. All this optimism still does not ensure automatic profitability or success for any retailer- domestic or international. Retailers will still have to be very much market oriented and they will have to research the prevailing consumer attitudes and other behavioral variables

Shopping experiences of the consumers are generally guided by their expectations. The objective 'raw data', e.g., a retail store with its characteristics, is internally processed in the consumer's mind. The short-term perception is the ground on which long-term attitudes towards the retailers are formed. These long-term attitudes then influence shopping behavior and attitudes- Morschett et al (2005); Hanna and Wozniak (2001).

Review of Literature

Walsh, Gianfranco and Hennig-Thurau (2001) observed that there is a lack of previous relevant consumer research in Germany, together with the need to test the generalizability of consumer decision-making styles in different countries and with non-student samples, prompted an investigation of German shoppers. The original U.S. eight-factor model could not be confirmed completely, but support was found for six factors: Brand Consciousness, Perfectionism, Recreational/Hedonism, and Confused by over choice, Impulsiveness, and Novelty-Fashion Consciousness. Variety Seeking was novel to Germany and replaced brand loyalty and price-value consciousness factors found in previous countries.

Traill, Bruce (2006) conducted study about analyzed the rapid spread of supermarkets in developing and middle-income countries and forecast its continuation. In this article, the level of supermarket penetration is modeled quantitatively on a cross-section of 42 countries for which data could be obtained, representing all stages of development. This study has found that: GDP, per capita income distribution, urbanization, female labor force participation and openness to inward foreign investment are all significant explicators.

Bhat and Bowonder (2001) analyzed the experience of interweaving brand reputation, organizational and technological innovation. The authors observed that the effective management of innovation involves creatively managing the process of creative destruction. For a product like a watch, capturing market share requires the careful enmeshing of brand reputation and innovation. Positioning itself uniquely through a comprehensive visioning exercise, Titan became a market leader. Titan Industries became the most admired brand in selling watches in forty countries.

Ajzen (1989), point out that an evaluative dimension is a common feature of all the definitions of attitude. Shim et al. (2001) indicate that an attitude toward a behavior can be recognized by an individual's positive or negative evaluation of a relevant behavior, which comprises a person's beliefs regarding the perceived outcomes of performing the behavior. From this perspective, knowledge of consumers' attitudes can help explain the reasons behind their favorable and unfavorable evaluations of an object or a behavior; for example, why consumers do or do not buy products of particular brand names or shop at certain types of store formats.

There are various measures of shopping attitudes. For instance, Urbany, Dickson, and Kalapurakal (1996) and Ailawadi, Neslin, and Gedenk (2001) have specifically developed a scale for measuring attitude toward grocery shopping. Childers et. al. (2001) developed a scale to measure attitude towards shopping that utilizes a technological device. In this research, we would like to measure the "enjoyment" that Indian consumers get from the shopping process. In the retailing literature this shopping enjoyment is referred to as attitude towards shopping (Donthu and Gilliland, (1996); Donthu and Garcia (1999); Beatty and Ferrell (1998); Reynolds and Beatty (1999) and Ellis (1995). Shopping enjoyment actually pertains to the "affective" aspect of the shopping attitude.

Several consumer studies have studied the "fun side" of shopping as opposed to "shopping as a work" Babin, Darden and Griffin (2005) and Batra and Ahtola (1991). Most of these studies have described shopping either in terms of its utilitarian aspects or in terms of its hedonic value. The utilitarian consumer behavior has been described as ergic, task-related, and rational. Perceived utilitarian shopping value might depend on whether the particular consumption need stimulating the shopping trip was accomplished. Often, this means a product is purchased in a deliberant and efficient manner. Utilitarian value, reflecting shopping with a work mentality, may be useful in explaining the "dark side of shopping" alluded to earlier.

According to Hirschman and Holbrook (1982), compared to shopping's utilitarian aspects, its festive, Lucid, or epicurean side has been studied less often. Hedonic value is more subjective and personal and its utilitarian counterpart and results more from fun and playfulness than from task completion. Thus, hedonic shopping value reflects shopping's potential entertainment and emotional worth.

In the Indian context in a study by Sinha (2003), is available on the subject of shopping styles. In his study involving 300 respondents, Sinha suggests that the average Indian shopper seeks emotional value more than functional value of shopping.

As not much work in India has been done in this context, the paper seeks to provide fruitful insights into the motives of Indian youth that can benefit academics as well as marketers. People's motives for shopping are a function of numerous variables, many of which are unrelated to the actual buying of products. Shopping experience is a utilitarian effort aimed at obtaining needed goods and services as well as hedonic rewards. Literature in marketing and related behavioural sciences suggests a breadth of consumer motives for shopping. The idea that consumers are motivated by more than simply the utilitarian motive to obtain desired items has been acknowledged at least as far back as the 1960s by Howard and Sheth (1969). Their consumer behaviour model, in addition to considering traditional explanatory variables such as needs, brand attitudes, and the impact of shopping behaviour on promotions, also examined less explicitly utilitarian consumer motives such as arousal seeking and symbolic communication.

Skinner (1969) identified the basic consumer motives in selecting a supermarket for the retail food industry. His study revealed that six variables: friendliness, selection/assortment, cleanliness, parking, fast checkout service, and ease of shopping to increase the probability of the shopping trip being pleasant.

The foregoing discussion also brings forth the fact that the rate of growth in the retail sector in India creates a requirement for greater research from the consumers' perspective. More specifically, research is required to answer simple yet pertinent questions related to "Why do people shop? The present paper, therefore, seeks to bridge gaps in the existing literature and yield fruitful insights into the shopping motives of Indian youth.

Objectives of the Study

The research was conducted keeping in view the following main objectives

- a) To study various shopping activities of customers.

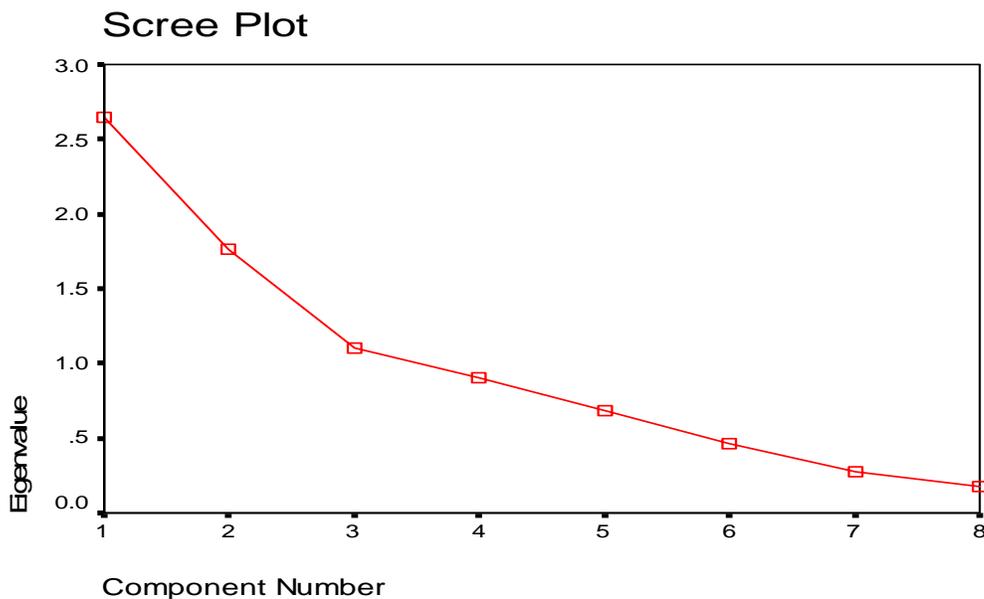
| | | | | | | | | | |
|---|-------|--------|---------|-------|--------|--------|-------|--------|--------|
| 1 | 2.643 | 33.035 | 33.035 | 2.643 | 33.035 | 33.035 | 2.508 | 31.349 | 31.349 |
| 2 | 1.762 | 22.025 | 55.060 | 1.762 | 22.025 | 55.060 | 1.701 | 21.267 | 52.616 |
| 3 | 1.099 | 13.734 | 68.794 | 1.099 | 13.734 | 68.794 | 1.294 | 16.178 | 68.794 |
| 4 | .901 | 11.267 | 80.062 | | | | | | |
| 5 | .682 | 8.523 | 88.585 | | | | | | |
| 6 | .468 | 5.851 | 94.436 | | | | | | |
| 7 | .273 | 3.410 | 97.846 | | | | | | |
| 8 | .172 | 2.154 | 100.000 | | | | | | |

Extraction Method: Principal Component Analysis.

An eigenvalue represents the amount of variance associated with the factor. Hence, only factors with a variance greater than 1.0 are included. From the above table, it is evident that the first three variables represent the 68.794% of variance. Therefore, only these three factors with the variance greater than one are retained; the other factors are not included in the model. So, from the above table of Eigen value, we extract only 3 factors from the 8 variables.

Determination based on SCREE Plot

From this plot also it is observed that the slope of first three components is steep and it starts trailing off after component number 3. This implies that these three factors can be clearly extracted.



Factors Loadings:

Factor loadings are simple correlations between the variables and factors. The most commonly method used are rotation is the varimax procedure. This is an orthogonal method of rotation that minimizes the number of variables with high loadings of a factor, thereby enhancing the interpretability of the factors. Orthogonal rotations results in factors that are uncorrelated.

Table 3: Component matrix

| | Component matrix | | | Rotated component matrix | | |
|-----------------|------------------|-------|-------|--------------------------|-------|-------|
| | 1 | 1 | 2 | 3 | 2 | 3 |
| Leisure | -.878 | -.925 | -.037 | -.084 | .240 | .188 |
| Accessories | -.289 | -.179 | -.248 | -.533 | -.416 | .347 |
| Clothes | .470 | .226 | .692 | .134 | .530 | .212 |
| Household Items | .820 | .888 | -.032 | .095 | -.275 | -.228 |
| Grocery | .873 | .868 | .215 | -.192 | -.230 | .145 |
| Eating Out | .277 | .002 | .775 | -.135 | .527 | .515 |
| Fashion | .213 | -.077 | .712 | .399 | .791 | .044 |
| Fun and Games | -.100 | -.140 | -.061 | .873 | .467 | -.747 |

Extraction Method: Principal Component Analysis.

The following three components extracted.

Component 1: Leisure, Household, Grocery.

Component 2: Fashion, eating out, Clothes.

Component 3: Fun and Games, Accessories.

Table 4: Rotated component matrix

| Activity | Component | | |
|-----------------|-----------|-------|-------|
| | 1 | 2 | 3 |
| Leisure | -.925 | -.037 | -.084 |
| Accessories | -.179 | -.248 | -.533 |
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| Fun and Games | -.140 | -.061 | .873 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Rotation converged in 4 iterations.

Component 1: Leisure, Household, Grocery.

Component 2: Fashion, eating out, Clothes.
 Component 3: Fun and Games, Accessories.

Both the un-rotated and rotated component matrix suggests presence of three interrelated factors.

Table 5: Mean values of activities in malls

| Activity | N | Mean | Std. Deviation |
|-----------------|----|------|----------------|
| Leisure | 80 | 1.46 | 0.50 |
| Accessories | 80 | 2.35 | 1.28 |
| Clothes | 80 | 1.56 | 1.13 |
| Household Items | 80 | 3.70 | 1.88 |
| Grocery | 80 | 3.46 | 1.90 |
| Eating out | 80 | 2.26 | 1.68 |
| Fashion | 80 | 2.39 | 1.29 |
| Fun and Games | 80 | 3.71 | 1.70 |

From the above table, it is observed that fun and games and household items get the maximum mean score, hence it emerges as the most significant activities at malls are fun and games and household items. Amongst the other important activities are grocery, accessories, fashion and eating out. The activities like leisure and clothes are the least important.

Important attributes of store image

In order to know the relative importance of the various attributes of store image, the responses obtained were subjected to factor analysis and then various tests were applied.

Table 6: KMO and Bartlett's test

| | | |
|---|--------------------|--------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | | .508 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 36.011 |
| | df | 10 |
| | Sig. | .000 |

The approximate chi-square is 36.011 with 10 degree of freedom, which is significant at the 0.00 level. The value of the KMO statistics (0.508) is also large (>0.5). Hence, the null hypothesis is rejected by the Bartlett's test of sphericity. Therefore, the different attributes of store image have different level of influence on shopping behaviour of customers.

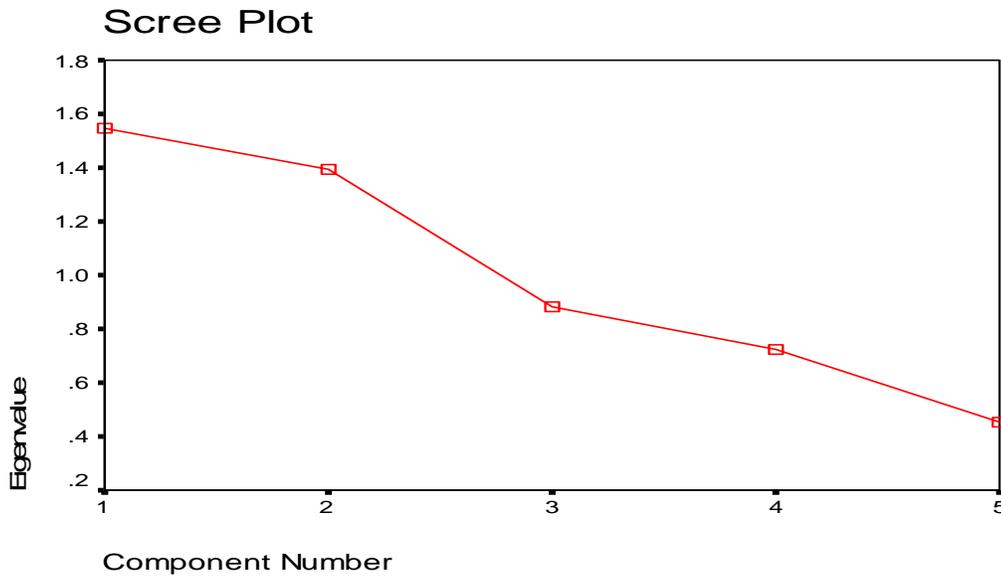
Table 7: Total variance explained

| Component | Initial Eigenvalues | | | Rotation Sums of Squared Loadings | | |
|-----------|---------------------|---------------|--------------|-----------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 1.545 | 30.890 | 30.890 | 1.543 | 30.863 | 30.863 |
| 2 | 1.395 | 27.901 | 58.792 | 1.396 | 27.928 | 58.792 |
| 3 | .883 | 17.670 | 76.461 | | | |
| 4 | .723 | 14.468 | 90.930 | | | |
| 5 | .454 | 9.070 | 100.000 | | | |

Extraction Method: Principal Component Analysis.

The first two variables represent the 58.792% of variance. Only factors with the variance greater than one are retained; the other factors are not included in the model. An eigenvalue represents the amount of variance associated with the factor. Hence, only factors with a variance greater than 1.0 are included.

From the above table, it is evident that the first two variables represent 58.792% of variance. Therefore, only these two factors with the variance greater than one are retained; the other factors are not included in the model. So, from the above table of Eigen value, we extract only two factors from the 5 variables.



From this plot, the slope of first two components is steep and it starts trailing off after component number 2. This implies that these two factors can be clearly extracted.

Factors Loadings

Factor loading are simple correlations between the variables and factors. The most commonly method used are rotation is the varimax procedure. This is an orthogonal method of rotation that minimizes the number of variables with high loadings of a factor, thereby enhancing the interpretability of the factors. Orthogonal rotations results in factors that are uncorrelated.

Table 8: Component matrix

| Store Attribute | Component | | Component | |
|-----------------|-----------|-------|-----------|-------|
| | 1 | 2 | 3 | 4 |
| Low price | -.860 | -.867 | -.034 | -.117 |
| Status | -.119 | -.047 | .756 | .748 |
| Quality | .053 | .115 | .654 | .662 |
| Availability | .132 | .073 | -.628 | -.618 |
| Reliability | .878 | .878 | -.043 | .040 |

Extraction Method: Principal Component Analysis.

Two components are extracted.

Component 1: Low price, reliability

Component 2: Status, quality, availability

Table9: Rotated component matrix

| Store Attribute | Component | |
|-----------------|-----------|-------|
| | 1 | 2 |
| Low price | -.867 | -.034 |
| Status | -.047 | .756 |
| Quality | .115 | .654 |
| Availability | .073 | -.628 |
| Reliability | .878 | -.043 |

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

Rotation converged in 3 iterations.

Component 1: Low price, reliability

Component 2: Status, quality, availability

Both the un-rotated and rotated component matrix suggests presence of two interrelated factors.

Table 10: Mean values of shopping reasons

| Store Attribute | N | Mean | Std. Deviation |
|------------------|----|------|----------------|
| Low price | 80 | 3.7 | 1.89 |
| Status symbol | 80 | 2.39 | 1.29 |
| Quality of goods | 80 | 3.71 | 1.69 |

| | | | |
|-----------------------------|----|------|------|
| Availability of best brands | 80 | 2.34 | 1.26 |
| Reliability of store | 80 | 3.66 | 1.75 |

From the above table, it is observed that quality of goods, low price and reliability of store get the maximum mean score; hence it emerges as the most significant attributes of store image are quality of goods, low price and reliability of store. The other attributes like status symbol and availability of best brands are considered least important for the selection of store.

Promotional strategies at mallsIn order to know about the relevant importance of various promotional activities at malls, the responses obtained were put to factor analysis and on the results so obtained KMO and Bartlett's test were applied.

.Table 11: KMO and Bartlett's Test

| | |
|---|--------------------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | .452 |
| Bartlett's Test of Sphericity | Approx. Chi-Square |
| | df |
| | Sig. |
| | 70.279 |
| | 10 |
| | .000 |

KMO value should always greater than 0.5, value below implies that factor analysis may not be appropriate. As in this case the value is less than 0.5, therefore factor analysis can not be used for our set of observations. Therefore, the null hypothesis is accepted. Hence, all promotional strategies of mall are a source of attraction for consumers.

Conclusion

In India, a consuming class is emerging owing to the increasing income levels and dual career families with high disposable incomes. With the retailers eyeing their presence in the market, it is pertinent for them to identify the target shoppers as well as to identify the prime activities while shopping in an organized retail outlet. I has been revealed in the study that each type of promotional activity for malls has a significant influence. The main sources of promotion for malls are TV, newspapers, banners, magazines and family/friends.

The frequency of visiting malls weekly or fortnightly is prevalent in a majority of the consumers. The frequency of visiting malls rarely or monthly is rather less. The habit for visiting a particular mall is lower and rather the consumers frequent various malls. It has been observed in the study that the consumers with age group > 40 visit malls frequently,

consumers of age group 25-30 visits malls weekly or fortnightly and whereas consumers with age group < 25 generally visit malls on monthly basis. The loyalty for a particular mall is low and consumers use to visit various malls at different occasions. The study observes that fun and games and household items emerge out to be the most significant activities at malls. Grocery, accessories, fashion and eating out are the other important activities at malls. The activities like leisure and clothes are the least important activities for the visitors.

The study reveals that quality of goods; low price and reliability of store emerge out to be the most significant attributes of store image. The attributes like status symbol and availability of best brands are least important for the selection of store. (It has also emerged out that all types of promotional strategies are significant for promoting malls and attracting the consumers. Marketers can hence tap this important target segment by framing the promotion strategies appropriately. This requires a focus on the economic criteria used at the time of shopping. The shoppers at organized retail outlets are also conscious of price discounts and the various other schemes hence such schemes should be framed accordingly and communicated to them so that that they are liked and accepted by them. This may lead to greater profits for the marketers as it would benefits by lead to increased satisfaction of the customers.

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In the Indian context, in a study by Sinha (2003) is available on the subject of shopping styles. In his study involving 300 respondents, Sinha suggests that the average Indian shopper seeks emotional value more than functional value of shopping.

As not much work in India has been done in this context, the paper seeks to provide fruitful insights into the motives of Indian youth that can benefit academics as well as marketers. People's motives for shopping are a function of numerous variables, many of which are unrelated to the actual buying of products. Shopping experience is a utilitarian effort aimed at obtaining needed goods and services as well as hedonic rewards. Literature in marketing and related behavioural sciences suggests a breadth of consumer motives for shopping. The idea that consumers are motivated by more than simply the utilitarian motive to obtain desired items has been acknowledged at least as far back as the 1960s by Howard and Sheth (1969). Their consumer behaviour model, in addition to considering traditional explanatory variables such as needs, brand attitudes, and the impact of shopping behaviour on promotions, also examined less explicitly utilitarian consumer motives such as arousal seeking and symbolic communication. Skinner (1969) identified the basic consumer motives in selecting a supermarket for the retail food industry. His study revealed that six variables: friendliness, selection/assortment, cleanliness, parking, fast checkout service, and ease of shopping to increase the probability of the shopping trip being pleasant.

The foregoing discussion also brings forth the fact that the rate of growth in the retail sector in India creates a requirement for greater research from the consumers' perspective. More specifically, research is required to answer simple yet pertinent questions related to "Why do people shop?" The present paper, therefore, seeks to bridge gaps in the existing literature and yield fruitful insights into the shopping motives of Indian youth.

Objectives of the Study

The research was conducted keeping in view the following main objectives:

- a) To study various shopping activities of customers.
- b) To study important attributes of store image.
- c) To study the impact of various promotional activities of a mall.

Hypotheses

On the basis of the review of literature, the following hypotheses have been formulated.

- a) All activities of customers at malls have equal importance.
- b) Various attributes of store image have equal influence on shopping behaviour of customers.
- c) Promotional strategies of a mall are a source of attraction for customers.

Methodology

The scope of this study is confined to the organized retail sector and specifically to Malls. The respondents were selected from the two cities of Chandigarh and Ludhiana. The study is based on primary data. The data was collected from eighty shoppers through the convenient sampling method these shoppers were either inside the mall or walk in customers. For obtaining the responses, a five point Likert scale has been used. Factor analysis has been applied to analyze the data, and inferences have been drawn on the basis of the results so obtained.

Results

A) Shopping Activities of the Consumers at Malls

In order to know about the various activities performed by consumers at malls, the responses obtained were put to factor analysis and the results, so obtained, were subjected to Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity tests. The null hypothesis is rejected by the Bartlett's test of sphericity. The approximate chi-square is 201.649 with 28 degree of freedom, which is significant at the 0.00 level. The value of the KMO statistics (0.634) is also large (>0.5). Hence, all activities of customers in malls do not have equal importance.

An eigen value represents the amount of variance associated with the factor. Hence, only factors with a variance greater than 1.0 are included. From Table 1 it is evident that the first three variables represent the 68.794% of variance. Therefore, only these three factors with the variance greater than one are retained, and the other factors are not included in the model. Thus, from Eigen values in Table 1, we extract only 3 factors from the 8 variables.

Table 1: Total variance explained

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|-----------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 2.643 | 33.035 | 33.035 | 2.643 | 33.035 | 33.035 | 2.508 | 31.349 | 31.349 |
| 2 | 1.762 | 22.025 | 55.060 | 1.762 | 22.025 | 55.060 | 1.701 | 21.267 | 52.616 |
| 3 | 1.099 | 13.734 | 68.794 | 1.099 | 13.734 | 68.794 | 1.294 | 16.178 | 68.794 |
| 4 | .901 | 11.267 | 80.062 | | | | | | |
| 5 | .682 | 8.523 | 88.585 | | | | | | |
| 6 | .468 | 5.851 | 94.436 | | | | | | |
| 7 | .273 | 3.410 | 97.846 | | | | | | |
| 8 | .172 | 2.154 | 100.000 | | | | | | |

Factor loadings are simple correlations between the variables and factors. The most commonly used method is the varimax rotation procedure. This is an orthogonal method of rotation that minimizes the number of variables with high loadings of a factor, thereby enhancing the interpretability of the factors. Orthogonal rotations results in factors that are uncorrelated.

Table 2: Component matrix

| Activity | Component matrix | | | Rotated component matrix | | |
|-----------------|------------------|-------|-------|--------------------------|-------|-------|
| | 1 | 2 | 3 | 1 | 2 | 3 |
| Leisure | -.878 | .240 | .188 | -.925 | -.037 | -.084 |
| Accessories | -.289 | -.416 | .347 | -.179 | -.248 | -.533 |
| Clothes | .470 | .530 | .212 | .226 | .692 | .134 |
| Household Items | .820 | -.275 | -.228 | .888 | -.032 | .095 |
| Grocery | .873 | -.230 | .145 | .868 | .215 | -.192 |
| Eating out | .277 | .527 | .515 | .002 | .775 | -.135 |
| Fashion | .213 | .791 | .044 | -.077 | .712 | .399 |
| Fun and Games | -.100 | .467 | -.747 | -.140 | -.061 | .873 |

Through the un-rotated component method (Table 2), the following three components may be extracted:

- Component 1: Leisure, Household, Grocery.
- Component 2: Fashion, eating out, Clothes.
- Component 3: Fun and Games, Accessories.

Principal Component Analysis under the rotation method (Varimax with Kaiser Normalization), rotation converged in 4 iterations. The following three components (Table 2) may be extracted:

- Component 1: Leisure, Household, Grocery.
- Component 2: Fashion, eating out, Clothes.
- Component 3: Fun and Games, Accessories.

Both the un-rotated and rotated component matrix suggests presence of the same three interrelated factors.

From Table 3, it is observed that fun and games and household items get the maximum mean score, hence it emerges as the most significant activities at malls are fun and games and household items. Amongst the other important activities are grocery, accessories, fashion and eating out. The activities like leisure and clothes are the least important.

Table 3: Mean values of activities in malls

| Activity | N | Mean | Std. Deviation |
|-----------------|----|------|----------------|
| Leisure | 80 | 1.46 | 0.50 |
| Accessories | 80 | 2.35 | 1.28 |
| Clothes | 80 | 1.56 | 1.13 |
| Household Items | 80 | 3.70 | 1.88 |
| Grocery | 80 | 3.46 | 1.90 |
| Eating out | 80 | 2.26 | 1.68 |
| Fashion | 80 | 2.39 | 1.29 |
| Fun and Games | 80 | 3.71 | 1.70 |

B) Important Attributes of Store Image

In order to know the relative importance of the various attributes of store image, the responses obtained were subjected to factor analysis and then various tests were applied. As per the Bartlett’s Test of Sphericity, the approximate chi-square is 36.011 with 10 degree of freedom, which is significant at the 0.000 level. The value of the KMO statistics (0.508) is also large (>0.5). Hence, the null hypothesis is rejected by the Bartlett’s test of sphericity. Therefore, the different attributes of store image have different level of influence on shopping behaviour of customers.

Table 4: Total variance explained

| Component | Initial Eigen values | | | Rotation Sums of Squared Loadings | | |
|-----------|----------------------|---------------|--------------|-----------------------------------|---------------|--------------|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 1.545 | 30.890 | 30.890 | 1.543 | 30.863 | 30.863 |
| 2 | 1.395 | 27.901 | 58.792 | 1.396 | 27.928 | 58.792 |
| 3 | .883 | 17.670 | 76.461 | | | |
| 4 | .723 | 14.468 | 90.930 | | | |
| 5 | .454 | 9.070 | 100.000 | | | |

From Table 4 it is evident that the first two variables represent 58.792% of variance. Therefore, only these two factors with the variance greater than one are retained. So, based on Eigen values in Table 4, we extract only two factors from the 5 variables.

Principal Component Analysis based on the un-rotated component extraction method, as shown in Table 5; the following two components may be extracted:

- Component 1: Low price, reliability
- Component 2: Status, quality, availability

Table 5: Component matrix

| Store Attribute | Component matrix | | Rotated component matrix | |
|-----------------|------------------|-------|--------------------------|-------|
| | 1 | 2 | 1 | 2 |
| Low price | -.860 | -.117 | -.867 | -.034 |
| Status | -.119 | .748 | -.047 | .756 |
| Quality | .053 | .662 | .115 | .654 |
| Availability | .132 | -.618 | .073 | -.628 |
| Reliability | .878 | .040 | .878 | -.043 |

Principal Component Analysis through Varimax with Kaiser Normalization method, rotation converged in 3 iterations. As shown in Table 5, the following two components may be extracted under this method:

- Component 1: Low price, reliability
- Component 2: Status, quality, availability

Both the un-rotated and rotated component matrix suggests presence of the same two interrelated factors.

Mean values of the shopping reasons in Table 6 indicate that quality of goods; low price and reliability of store get the maximum mean score. Hence it emerges that the most significant attributes of store image are quality of goods, low price and reliability of store. The other attributes like status symbol and availability of best brands are considered least important for the selection of store.

Table 6: Mean values of shopping reasons

| Store Attribute | N | Mean | Std. Deviation |
|-----------------------------|----|------|----------------|
| Low price | 80 | 3.7 | 1.89 |
| Status symbol | 80 | 2.39 | 1.29 |
| Quality of goods | 80 | 3.71 | 1.69 |
| Availability of best brands | 80 | 2.34 | 1.26 |
| Reliability of store | 80 | 3.66 | 1.75 |

C) Promotional Strategies at Malls

In order to know about the relevant importance of various promotional activities at malls, the responses obtained were put to factor analysis and on the results so obtained KMO and Bartlett's test were applied. KMO value should always be greater than 0.5, value below implies that factor analysis may not be appropriate. As in this case the value is less than 0.5, therefore, factor analysis can not be used for our set of observations. Therefore, the null hypothesis is accepted. Hence, all promotional strategies of mall are a source of attraction for consumers.

Conclusion

In India, a consuming class is emerging owing to the increasing income levels and dual career families with high disposable incomes. With the retailers eyeing their presence in the market, it is pertinent for them to identify the target shoppers as well as to identify the prime activities while shopping in an organized retail outlet. It has been revealed in the study that each type of promotional activity for malls has a significant influence. The main sources of promotion for malls are TV, newspapers, banners, magazines and family/friends.

The frequency of visiting malls weekly or fortnightly is prevalent among a majority of the consumers. The frequency of visiting malls rarely or monthly is rather less. The habit for visiting a particular mall is lower and rather the consumers frequent various malls. It has been observed in the study that the consumers with age group > 40 visit malls frequently, consumers of age group 25-30 visit malls weekly or fortnightly and whereas consumers with age group < 25 generally visit malls on monthly basis. The loyalty for a particular mall is low and consumers use to visit various malls at different occasions. The study observes that fun and games and household items emerge out to be the most significant activities at malls. Grocery, accessories, fashion and eating out are the other important activities at malls. The activities like leisure and clothes are the least important activities for the visitors.

The study reveals that quality of goods; low price and reliability of store emerge out to be the most significant attributes of store image. The attributes like status symbol and

availability of best brands are least important for the selection of store. (It has also emerged out that all types of promotional strategies are significant for promoting malls and attracting the consumers. Marketers can hence tap this important target segment by framing the promotion strategies appropriately. This requires a focus on the economic criteria used at the time of shopping. The shoppers at organized retail outlets are also conscious of price discounts and the various other schemes hence such schemes should be framed accordingly and communicated to them so that that they are liked and accepted by them. This may lead to greater profits for the marketers as it would benefits by lead to increased satisfaction of the customers.

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Liberalization and Customer Preference for Life Insurance in Northern India

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With liberalization of Insurance in India, the insurance industry is slowly becoming cluttered with numerous private joint ventures trying to entice the Indian consumers with well-designed products and benefits. This paper makes an attempt at identifying the key factors responsible for customer preference for Life insurance products in India. Using the technique of Analysis of Variance (ANOVA) and multiple comparisons through post-hoc tests, this study identifies variables of preference for the different groups of the respondents. Analysis has been conducted by dividing the respondents in three groups according to time of purchase of insurance policy/ plan. Inter-group comparisons have also been carried out to reach at significant conclusions.

Introduction

Human being has always tried to seek protection against the illness, financial loss due to death and any other calamity in one form or the other. A lot of financial as well as emotional stress comes on the members of the family in case of loss of life of main breadwinner of the family. At this juncture insurance to some extent can give financial relief to the members of the family. Insurance is defined as a contract between two parties whereby one party undertakes, in exchange for a fixed sum called premium, to pay the other party called insured, a fixed amount of money on the happening of a certain (pre-decided /insured) event. The Commission on Insurance Terminology of the American Risk and Insurance Association has defined insurance as follows:

“Insurance is the pooling of fortuitous losses by transfer of such risk to insurers, who agree to indemnify insured for such losses, to provide other pecuniary benefits on their occurrence, or to render services connected with the risk”. Life insurance industry in India had been a monopoly of life insurance Corporation of India (LIC) for more than four decades. Over the period of time number of committees and

groups, including Malhotra committee and Mukherjee committee, have been formed to suggest measures to the insurance penetration and insurance density in India as well as make it a vivacious industry. There were a number of apprehensions while opening up the insurance sector for competition. Some of these apprehensions were related to loss of job opportunities, inadequate know-how and infrastructure, inability to meet global pressures and difficulty in adopting world class standards. At the same time there was fear in the mind of policy makers as well as the public. The fear was the result of carry over effects of the market misconduct, anomalies and malpractices which existed in the insurance industry before nationalization of the industry in 1956. It was after lot of discussions, deliberations and criticism that insurance industry was once again opened for the competition and entry of private players was allowed in the insurance industry. However, initially government has put a ceiling of 26% on foreign direct investment and minimum capital requirement of one hundred crores of rupees, along with other regulations, for the life insurance industry.

Whether, liberalization of insurance sector would really mark a favorable impact on the growth of economy and on the betterment of the people still remains a big question mark. Before liberalization LIC was the only player and consumer had to select from the product range offered by the LIC. Today the Indian insurance sector has transformed into a buyer's market, where the consumer has the choice to select from a variety of products, services and service providers. If the hype built around the private entry into insurance is believed the consumers are expected to benefit in three ways i.e. more of choice, the easier access and better customer services through diverse products and varied distribution. An investor takes into account various factors while deciding about buying of a Life Insurance. These ranges of factors begin with investor perception, the promised return and the attractiveness of the offer. Generally, consumers do not evaluate all possible product attributes while making a choice. Their preference is guided by a set of "key attributes / variables" attached to the insurance product/ plan. In the present study a set of fifteen variables has been taken. These variables have been derived from various earlier studies conducted both in India and abroad. Some of these studies have been conducted by Singh (1979); Lehtinen and Lehtinen (1982, 1991); Lawson and Watt (1983); Gronroos (1984); Parasuraman, Zeithml and Berry (1985); Lewis and Smith (1989); Debasish (2004), Vanniarajan (2004). In the present study, we have tried to track these variables for life insurance products for the different groups of customers. An attempt has also been made to find out the

important life insurance product attributes that are essential in influencing the purchase decision of consumers.

Research Methodology and Research Design

The study is explorative in nature and focuses basically on primary data about customer preference for life insurance in the Northern Region of India. The study is based on non-probability, convenient sampling. A well-structured and pre-tested questionnaire was administered to the respondents for the collection of data. A sample size of 300 policyholders has been taken for the purpose of the study. A representative sample has been drawn from each of the five northern states on the basis of the population of these states, as per the census of 2001. However due to the constraints of time and cost, selection of respondents have been restricted only to major towns and cities of the below mentioned states. Geographic distribution of respondents is shown as below in the table 1.

Table 1: Geographical sample distribution of respondents

| Sr.No. | State | Number of Respondents |
|---------------|-------------------|------------------------------|
| 1 | Punjab | 82 |
| 2 | Haryana | 95 |
| 3 | Jammu and Kashmir | 24 |
| 4 | Himachal Pradesh | 40 |
| 5 | Delhi and NCR | 59 |

The respondents have been divided into three groups for the purpose of analysis. The first group constitutes those respondents who had purchased the policy before liberalization and still possess the insurance policy. The second group comprises of those respondents who had policy before liberalization and purchased another policy after liberalization. The third group represents those respondents who didn't have any policy before liberalization but have purchased insurance policy after liberalization of life insurance industry. The number of respondents of the each group according to the period of purchase of insurance policy/ plan is

shown in the table 2. The respondents for the three groups have been given the name of old respondents, evolved respondents and new respondents respectively.

Table 2: Group wise break up of respondents

| Sr. No. | Period of Purchase of Insurance | Number of Respondents | Group of Respondents |
|----------------|--|------------------------------|-----------------------------|
| 1 | Pre liberalization only | 115 | Old |
| 2 | Both pre and post liberalization | 90 | Evolved |
| 3 | Post liberalization only | 95 | New |

The opinion of 300 respondents on 15 variables/reasons for preference of life insurance was measured on a five-point scale (Likert Scale) ranging from “1” (most important) to “5” (least important) depending on the importance attached to each variable.

Tools for Data Analysis

The data obtained for the study was analyzed by using analysis of variance (Anova) technique and post-hoc test for identification of the key features/ variables preferred by the respondents in a life insurance policy/ plan. Data have been analyzed with the help of statistical package SPSS version 11. A one-way ANOVA, or single factor ANOVA, tests differences between groups that are only classified on one independent variable (Green et al.1986). An ANOVA (Analysis of Variance), sometimes called an F test, is closely related to the t test. The major difference is that, where the t test measures the difference between the means of two groups, an ANOVA tests the difference between the means of two or more groups. However, one potential drawback to an ANOVA is that we lose specificity, all an F tells is that there is a significant difference between groups, not which groups are significantly different from each other. To test for this, we use a post-hoc comparison to find out where the differences are i.e. which groups are significantly different from each other and which are not. In the present study Tukey HSD, Scheffe and LSD test have been employed for multiple comparisons among different groups. If the groups seem different, then it is concluded that the independent variable has an effect on the dependent.

Results and Discussions

The first output from the F test is the descriptive statistics, which basically gives mean, standard deviation, number of respondents in different groups, minimum and maximum rating given to different variables as shown in the Table 3.

Table 3: Descriptive statistics for all the variables

| Variables | | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum |
|---|---------|-----|--------|----------------|------------|----------------------------------|-------------|---------|---------|
| | | | | | | Lower Bound | Upper Bound | | |
| Public / Private ownership | Old | 115 | 1.7434 | .78807 | .07414 | 1.5965 | 1.8903 | 1.00 | 5.00 |
| | Evolved | 90 | 1.5778 | .74920 | .07897 | 1.4209 | 1.7347 | 1.00 | 4.00 |
| | New | 95 | 1.6947 | .79992 | .08207 | 1.5318 | 1.8577 | 1.00 | 4.00 |
| | Total | 300 | 1.6779 | .78082 | .04523 | 1.5888 | 1.7669 | 1.00 | 5.00 |
| Corporate image/ brand name | Old | 115 | 1.7826 | .49173 | .04585 | 1.6918 | 1.8734 | 1.00 | 3.00 |
| | Evolved | 90 | 1.6444 | .67560 | .07121 | 1.5029 | 1.7859 | 1.00 | 3.00 |
| | New | 95 | 1.5263 | .82310 | .08445 | 1.3586 | 1.6940 | 1.00 | 5.00 |
| | Total | 300 | 1.6600 | .67274 | .03884 | 1.5836 | 1.7364 | 1.00 | 5.00 |
| Wide range of products/ policies for each segment | Old | 115 | 1.7699 | .76775 | .07222 | 1.6268 | 1.9130 | 1.00 | 5.00 |
| | Evolved | 90 | 1.9000 | 1.03912 | .10953 | 1.6824 | 2.1176 | 1.00 | 5.00 |
| | New | 95 | 2.0000 | .85053 | .08726 | 1.8267 | 2.1733 | 1.00 | 5.00 |
| | Total | 300 | 1.8826 | .88552 | .05130 | 1.7816 | 1.9835 | 1.00 | 5.00 |
| Behavior of company's staff | Old | 115 | 1.6000 | .64618 | .06026 | 1.4806 | 1.7194 | 1.00 | 3.00 |
| | Evolved | 90 | 1.6667 | .67040 | .07067 | 1.5263 | 1.8071 | 1.00 | 3.00 |
| | New | 95 | 1.6947 | .75897 | .07787 | 1.5401 | 1.8493 | 1.00 | 4.00 |
| | Total | 300 | 1.6500 | .68975 | .03982 | 1.5716 | 1.7284 | 1.00 | 4.00 |
| Transparent and fair dealing | Old | 115 | 1.4087 | .52808 | .04924 | 1.3111 | 1.5062 | 1.00 | 3.00 |
| | Evolved | 90 | 1.5000 | .58722 | .06260 | 1.3756 | 1.6244 | 1.00 | 3.00 |
| | New | 95 | 1.3263 | .47135 | .04836 | 1.2303 | 1.4223 | 1.00 | 2.00 |
| | Total | 300 | 1.4094 | .53199 | .03082 | 1.3487 | 1.4700 | 1.00 | 3.00 |
| Network of branches | Old | 115 | 1.6696 | .69739 | .06503 | 1.5407 | 1.7984 | 1.00 | 3.00 |
| | Evolved | 90 | 1.7111 | 1.00833 | .10629 | 1.4999 | 1.9223 | 1.00 | 5.00 |
| | New | 95 | 1.8000 | .72347 | .07423 | 1.6526 | 1.9474 | 1.00 | 3.00 |
| | Total | 300 | 1.7233 | .80972 | .04675 | 1.6313 | 1.8153 | 1.00 | 5.00 |
| Customer relationship management | Old | 115 | 1.6261 | .75464 | .07037 | 1.4867 | 1.7655 | 1.00 | 5.00 |
| | Evolved | 90 | 1.6444 | .76893 | .08105 | 1.4834 | 1.8055 | 1.00 | 4.00 |
| | New | 95 | 1.4947 | .59918 | .06147 | 1.3727 | 1.6168 | 1.00 | 3.00 |
| | Total | 300 | 1.5900 | .71433 | .04124 | 1.5088 | 1.6712 | 1.00 | 5.00 |
| Premium amount | Old | 115 | 1.5652 | .56398 | .05259 | 1.4610 | 1.6694 | 1.00 | 3.00 |
| | Evolved | 90 | 1.3556 | .64147 | .06762 | 1.2212 | 1.4899 | 1.00 | 4.00 |
| | New | 95 | 1.4624 | .65207 | .06762 | 1.3281 | 1.5967 | 1.00 | 3.00 |
| | Total | 300 | 1.4698 | .62017 | .03593 | 1.3991 | 1.5405 | 1.00 | 4.00 |
| Extra coverage/ bonus payout | Old | 115 | 1.7826 | .57404 | .05353 | 1.6766 | 1.8886 | 1.00 | 3.00 |

| | | | | | | | | | |
|-------------------------------------|---------|-----|--------|---------|--------|--------|--------|------|------|
| | Evolved | 90 | 1.4667 | .58444 | .06161 | 1.3443 | 1.5891 | 1.00 | 3.00 |
| | New | 95 | 1.5474 | .61486 | .06308 | 1.4221 | 1.6726 | 1.00 | 3.00 |
| | Total | 300 | 1.6133 | .60418 | .03488 | 1.5447 | 1.6820 | 1.00 | 3.00 |
| Rate of return | Old | 115 | 1.8348 | .77154 | .07195 | 1.6923 | 1.9773 | 1.00 | 5.00 |
| | Evolved | 90 | 1.4091 | .75256 | .08022 | 1.2496 | 1.5685 | 1.00 | 5.00 |
| | New | 95 | 1.3895 | .57046 | .05853 | 1.2733 | 1.5057 | 1.00 | 3.00 |
| | Total | 300 | 1.5671 | .73663 | .04267 | 1.4831 | 1.6511 | 1.00 | 5.00 |
| Tax benefit | Old | 115 | 1.8174 | .80112 | .07471 | 1.6694 | 1.9654 | 1.00 | 5.00 |
| | Evolved | 90 | 1.3778 | .53165 | .05604 | 1.2664 | 1.4891 | 1.00 | 3.00 |
| | New | 95 | 1.5269 | .58219 | .06037 | 1.4070 | 1.6468 | 1.00 | 3.00 |
| | Total | 300 | 1.5940 | .68625 | .03975 | 1.5157 | 1.6722 | 1.00 | 5.00 |
| Liquidity/ surrender value | Old | 115 | 2.0435 | .78797 | .07348 | 1.8979 | 2.1890 | 1.00 | 5.00 |
| | Evolved | 90 | 1.6364 | .60991 | .06502 | 1.5071 | 1.7656 | 1.00 | 3.00 |
| | New | 95 | 1.9158 | .84631 | .08683 | 1.7434 | 2.0882 | 1.00 | 5.00 |
| | Total | 300 | 1.8826 | .77609 | .04496 | 1.7941 | 1.9710 | 1.00 | 5.00 |
| Maturity amount/ assured return | Old | 115 | 1.8000 | .88059 | .08212 | 1.6373 | 1.9627 | 1.00 | 5.00 |
| | Evolved | 90 | 1.3556 | .52598 | .05544 | 1.2454 | 1.4657 | 1.00 | 3.00 |
| | New | 95 | 1.4316 | .61285 | .06288 | 1.3067 | 1.5564 | 1.00 | 3.00 |
| | Total | 300 | 1.5500 | .73209 | .04227 | 1.4668 | 1.6332 | 1.00 | 5.00 |
| Risk coverage/ protection to family | Old | 115 | 1.6435 | .69068 | .06441 | 1.5159 | 1.7711 | 1.00 | 5.00 |
| | Evolved | 90 | 1.2222 | .55643 | .05865 | 1.1057 | 1.3388 | 1.00 | 4.00 |
| | New | 95 | 1.4000 | .64247 | .06592 | 1.2691 | 1.5309 | 1.00 | 4.00 |
| | Total | 300 | 1.4400 | .65918 | .03806 | 1.3651 | 1.5149 | 1.00 | 5.00 |
| Loan availability | Old | 115 | 2.1043 | .97669 | .09108 | 1.9239 | 2.2848 | 1.00 | 5.00 |
| | Evolved | 90 | 1.9545 | 1.00469 | 1.0710 | 1.7417 | 2.1674 | 1.00 | 5.00 |
| | New | 95 | 2.1684 | .96373 | .09888 | 1.9721 | 2.3647 | 1.00 | 5.00 |
| | Total | 300 | 2.0805 | .98142 | .05685 | 1.9687 | 2.1924 | 1.00 | 5.00 |

Descriptive statistics show that on an overall basis transparent/fair dealing is the most important variable with a mean of ($\mu_0=1.4094$)* and loan availability is the least important variable with a mean of ($\mu_0=2.0805$) among all the variables that influence policyholders to buy the life insurance. A cross group comparison shows that the most influential variable among all the groups is risk coverage with a mean of ($\mu=1.2222$) **. Besides other important variables are premium amount ($\mu=1.4698$), risk coverage/ protection to family ($\mu=1.4400$) as mean rating of these selection variables are also high. As compared to evolved and new customers the important variables in case of old customers i.e. who had purchased the insurance plan before liberalisation had been wide range of products and services ($\mu=1.7699$), behavior of companies' staff ($\mu=1.6000$) and network of branches ($\mu=1.6696$). In case of evolved customers' group i.e. customers who had insurance plan both before as well as after liberalisation, policyholders gave more importance to the variables of public private ownership($\mu=1.5778$), premium amount ($\mu=1.3556$), extra

coverage bonus payout ($\mu=1.4667$), tax benefit($\mu=1.3778$), liquidity/ surrender value($\mu=1.6364$), maturity amount/ assured return ($\mu= 1.3556$) and risk coverage/ protection to family($\mu=1.2222$) as compared to old customers and the new customers. In case of new customers variables of corporate image/ brand name ($\mu=1.6444$), transparent and fair dealings ($\mu=1.5000$), customer relationship management ($\mu=1.6444$), rate of return ($\mu=1.4091$) and loan availability ($\mu= 1.9545$) has been given more importance as compared to old customers and evolved customers.

Hypothesis1: Different groups of respondents confer the same importance to the variable of 'public/ private ownership'

The variable public/ private ownership has the highest average in case of new customers ($\mu= 1.5778$) and has the least average in case of old respondents ($\mu=1.7434$). However there were no significant inter group differences ($F=1.160$, $p\text{-value} \geq .05$) as shown in table 4. So we have accepted the hypothesis that different groups of respondents attach the same importance to the variable of public/ private ownership

* μ_0 indicates mean for the total number of respondents

** μ indicates mean for the individual groups

Table 4: Significance of responses with respect to different variables

| Variables | | Sum of Squares | df | Mean Square | F | Sig. |
|---|----------------|----------------|-----|-------------|-------|-------|
| Public / Private ownership | Between Groups | 1.413 | 2 | 0.707 | 1.160 | 0.315 |
| | Within Groups | 179.660 | 298 | 0.609 | | |
| | Total | 181.074 | 300 | | | |
| Corporate image/ brand name | Between Groups | 3.448 | 2 | 1.724 | 3.883 | 0.022 |
| | Within Groups | 131.872 | 298 | 0.444 | | |
| | Total | 135.320 | 300 | | | |
| Wide range of products/ policies for each segment | Between Groups | 2.772 | 2 | 1.386 | | 1.777 |
| | Within Groups | 230.118 | 298 | 0.780 | | .171 |
| | Total | 232.889 | 300 | | | |
| Behavior of company's staff | Between Groups | .503 | 2 | 0.251 | 0.527 | 0.591 |
| | Within Groups | 141.747 | 298 | 0.477 | | |
| | Total | 142.250 | 300 | | | |
| Transparent and fair dealing | Between Groups | 1.378 | 2 | 0.689 | 2.459 | 0.087 |
| | Within Groups | 82.676 | 298 | 0.280 | | |

| | | | | | | |
|-------------------------------------|----------------|---------|-----|-------|--------|-------|
| | Total | 84.054 | 300 | | | |
| Network of branches | Between Groups | 0.904 | 2 | 0.452 | 0.688 | 0.503 |
| | Within Groups | 195.132 | 298 | 0.657 | | |
| | Total | 196.037 | 300 | | | |
| Customer relationship management | Between Groups | 1.279 | 2 | 0.639 | 1.255 | 0.287 |
| | Within Groups | 151.291 | 298 | 0.509 | | |
| | Total | 152.570 | 300 | | | |
| Premium amount | Between Groups | 2.227 | 2 | 1.113 | 2.933 | 0.055 |
| | Within Groups | 112.001 | 298 | 0.380 | | |
| | Total | 114.228 | 300 | | | |
| Extra coverage/ bonus payout | Between Groups | 5.645 | 2 | 2.822 | 8.099 | 0.000 |
| | Within Groups | 103.502 | 298 | 0.348 | | |
| | Total | 109.147 | 300 | | | |
| Rate of return | Between Groups | 13.435 | 2 | 6.717 | 13.414 | 0.000 |
| | Within Groups | 147.723 | 298 | 0.501 | | |
| | Total | 161.158 | 300 | | | |
| Tax benefit | Between Groups | 10.366 | 2 | 5.183 | 11.806 | 0.000 |
| | Within Groups | 129.504 | 298 | 0.439 | | |
| | Total | 139.869 | 300 | | | |
| Liquidity/ surrender value | Between Groups | 8.417 | 2 | 4.208 | 7.282 | 0.001 |
| | Within Groups | 170.473 | 298 | 0.578 | | |
| | Total | 178.889 | 300 | | | |
| Maturity amount/ assured return | Between Groups | 11.923 | 2 | 5.961 | 11.936 | 0.000 |
| | Within Groups | 148.327 | 298 | .499 | | |
| | Total | 160.250 | 300 | | | |
| Risk coverage/ protection to family | Between Groups | 9.182 | 2 | 4.591 | 11.293 | 0.000 |
| | Within Groups | 120.738 | 298 | 0.407 | | |
| | Total | 129.920 | 300 | | | |
| Loan availability | Between Groups | 2.196 | 2 | 1.098 | 1.141 | 0.321 |
| | Within Groups | 283.871 | 298 | 0.962 | | |
| | Total | 286.067 | 300 | | | |

Hypothesis 2: Different groups of respondents attach the same importance to the variable 'corporate image/ brand name'

The variable corporate image /brand name has the highest average in case of evolved customers ($\mu=1.5263$) and has the least average in case of old respondents ($\mu=1.7826$). Statistically tested, results reveal that there are significant differences ($F=3.883$ and $p\text{-value}=.022$) in the mean level of ratings for the three groups of the respondents as shown in table 5. Since the $p\text{-value} \leq .05$, the hypothesis is rejected and is found that different groups of respondents perceive the variable 'corporate image/ brand name' in different magnitude.

Hypothesis 3: Different groups of respondents attach the same importance to the variable 'wide range of products/ policies'

The variable of wide range of products/ policies has the highest average in case of old customers ($\mu=1.7699$) and has the least average in case of new respondents ($\mu=2.000$). However statistically tested, results reveal that respondents of all the groups give the same mean importance ($F=1.777$, $p\text{-value} \geq .05$) to the variable of wide range of products/ policies as shown in table 6. Hence the above stated hypothesis is accepted.

Hypothesis 4: Different groups of respondents give the same importance to the variable 'Behavior of company's staff'

Respondents of all the groups hold almost the same opinion about the importance of staff behavior as the mean rating for all the groups is near 1.6, with the overall mean rating being ($\mu_0=1.6500$, $F=.196$, $p \geq .05$) as shown in table 7. The highest mean rating is in case of old customers ($\mu=1.6000$) and the least mean is in case of new respondents ($\mu=1.6947$). So, we accept the above hypothesis.

Hypothesis 5: Different groups of respondents attach the same importance to the variable 'Transparent and fair dealing'

The variable of transparent and fair dealing has the highest average in case of new customers ($\mu=1.3263$) and has the least average in case of evolved respondents ($\mu=1.5000$). Results do not show any significant inter group difference in the mean ratings ($F=2.459$, $p\text{-value} \geq .05$) as shown in table 8. So, the above

hypothesis is accepted i.e. different groups of respondents attach the same importance to the variable 'Transparent and fair dealing'

Hypothesis 6: Different groups of respondents attach the same importance to the variable 'Network of branches'

The variable network of branches has the highest average in case of old customers ($\mu=1.6696$) and has the least average in case of new respondents ($\mu=1.8000$). As shown in table 9, since the $F=.688$, $p\text{-value} \geq .05$, once again hypothesis is accepted and concluded that mean ratings for the three groups of the respondents are same.

Hypothesis 7: Different groups of respondents attach the same importance to the variable 'Customer relationship management'

The variable of customer relationship management has the highest average in case of new customers ($\mu=1.4947$) and has the least average in case of evolved respondents ($\mu=1.6444$). The overall average is ($\mu_0=1.5900$) with ($F=1.255$, $p\text{-value}=.287$) as shown in table 10. Since the results do not reveal any significant inter group difference ($p\text{-value} \geq .05$), the hypothesis is accepted.

Hypothesis 8: Different groups of respondents attach the same importance to the variable 'Premium amount'

Respondents of the evolved group give more weightage to the premium amount as a selection variable ($\mu=1.3556$) as compared to respondents of old group ($\mu=1.5652$). However, statistically tested results do not reveal any significant difference among the mean ratings of the three groups ($F=2.933$, $p \geq .05$) as shown in table 11. So the hypothesis is accepted that different groups of respondents attach the same importance to the variable 'Premium amount'

Hypothesis 9: Different groups of respondents attach the same importance to the variable 'Extra coverage/ bonus payout'

The variable has minimum score for the old respondents ($\mu=1.7826$) and has maximum score for the new customers ($\mu=1.5474$). Statistically tested significant inter group differences were found ($\mu_0=1.8000$, $F=8.099$, $p=.000$) as shown in table 12. So we have rejected the above stated hypothesis which means mean rating of the three groups of the respondents for the variable 'extra coverage/ bonus payout' are different.

Hypothesis 10: Different groups of respondents attach the same importance to the variable 'rate of return'

The variable rate of return has the highest average in case of new customers ($\mu= 1.3895$) and has the least average in case of old respondents ($\mu=1.8348$). Results of anova reveal that there are significant inter group differences ($F=13.414$, $p\leq.05$) in the mean ratings for the variable 'Rate of return' as shown in table 13. So, the above hypothesis is rejected and is found that different groups of respondents give different weightage to the variable 'rate of return'.

Hypothesis 11: Different groups of respondents attach the same importance to the variable 'Tax Benefit'

The variable tax benefit has the highest average in case of evolved customers ($\mu= 1.3778$) and has the least average in case of old respondents ($\mu=1.8174$). Since the p-value is .000 ($F= 11.806$, $p\text{-value} \leq .05$), as shown in table 14, the hypothesis is rejected and is found that different groups of respondents attach the different degree of importance to the variable 'Tax benefit'.

Hypothesis 12: Different groups of respondents attach the same importance to the variable 'Liquidity/ surrender value'

The variable has the maximum mean rating in case of evolved respondents ($\mu= 1.6364$) and lowest mean rating in case of old respondents ($\mu=2.0435$). Results of Anova test, reveal that there are inter group differences in the ratings given by the respondents ($F=7.282$, $p\leq.05$) as shown in table 15. So the hypothesis is rejected and concluded that different groups of respondents do not give the same weightage to the variable 'Liquidity/ surrender value'

Hypothesis 13: Different groups of respondents attach the same importance to the variable 'Maturity amount/ assured return'

The variable of maturity amount/ assured return has the highest average in case of evolved customers ($\mu= 1.5263$) and has the least average in case of old respondents ($\mu=1.7826$). Since the $F=11.936$, $p\text{-value} \leq .05$ as shown in table 16, we reject the hypothesis that there are no inter group difference in the mean ratings for the variable 'Maturity amount/ assured return'

Hypothesis 14: Different groups of respondents attach the same importance to the variable Risk coverage/ protection to family

The variable 'risk coverage/ protection to family' has the highest average in case of evolved customers ($\mu=1.2222$), the least average in case of old respondents ($\mu=1.6435$) and the overall average is ($\mu_0=1.4400$). Statistically tested, results indicate that there are significant inter group differences ($F=11.293$, $p\leq.05$) as shown in table 17. So we reject the hypothesis that different groups of respondents confer the same weightage to the variable Risk coverage/ protection to family

Hypothesis 15: Different groups of respondents attach the same importance to the variable Loan availability

The overall mean rating for the variable is ($\mu_0=2.0805$). The variable has the highest average in case of evolved customers ($\mu=1.9545$) and has the least average in case of new respondents ($\mu=2.1684$). Statistically tested no significant differences emerge among the different groups ($F=1.141$, $p\geq.05$) as shown in table 18. So the above stated hypothesis is accepted i.e. respondents of all the groups give the same magnitude of importance to the variable Loan availability

After analyzing the results of ANOVA, post-hoc comparisons have been conducted to find out which groups are significantly different from each other and which are not. As shown in table 19, the values with asterisk (*) in the column Mean Difference (I-J), represent the significant level of difference in the different groups. The results reveal that ratings for the variable corporate image/ brand name are significantly different for old respondents and new respondents. It means that respondents who had purchased policy after liberalisation give more weightage to the variable as compared to the respondents who purchased policy before liberalization. Although F test does not reveal significant differences among the three groups for the variable 'transparent and fair dealing' and the variable 'premium amount' but results of turkey HSD and LSD test show that rating are different for the evolved respondents and new respondents for the variable 'transparent and fair dealing' and old respondent and new respondents for the variable 'premium amount'. Similarly mean importance given to variables Extra coverage/ bonus payout, Rate of return, Tax benefit, Maturity amount/ assured return and Risk coverage/ protection to family are different for old respondents and new respondents as well as for old respondents and evolved respondents. It has also been observed that there exist no significance difference in the preference for the evolved customers and the new customers.

Conclusion

From the above findings and analysis we find that the variable 'premium amount' is given the maximum importance by the respondents, who purchased policy before as well as after liberalization i.e. evolved customers. Variables corporate image/ brand name', 'transparent and fair dealings' are considered the most important by the respondents who purchased policy after liberalization. Variables 'liquidity/ surrender value', 'extra coverage/ bonus payout', 'rate of return', 'tax benefit', 'maturity amount/ assured return', 'risk coverage/ protection to family' were given more weightage by the respondents who purchased policy after liberalization as compared to respondents who purchased policy before liberalization.

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REFORMING MUTUAL FUNDS IN INDIA

Professor Vyuptakesh Sharan

Mutual funds are significant financial intermediary collecting funds mainly from small investors and investing them in financial market securities. Till 1986, the entire mutual funds activities were vested in the Unit Trust of India. In 1987, a few public sector banks, Life Insurance Corporation of India and General Insurance Corporation entered the mutual funds business. Again, it was in 1993 that private sector companies were allowed to operate in this area. Thus in view of growing mutual fund activities, regulation became imperative and it was the SEBI that began regulating them. It is not simply the regulation, several policy measures were taken to reform the functioning of this particular intermediary. The present paper highlights them and analyses their impact. However, in the beginning, the features of the basic schemes along with the pre-1993 scenario will be mentioned in brief in order to form a background for the main discussion.

FEATURES OF MUTUAL FUNDS AND THEIR SCHEMES

Mutual funds launch miscellany of schemes under which they sell units to the investors, thereby collect funds and invest those funds in capital and money market securities. The schemes are varied in features. While some schemes are open-ended, the others are close-ended. Again, while some schemes are income schemes, the others are growth schemes. In the past years, various combinations of these schemes have been launched in order to serve the multiplicity of interest of the investors.

The open-ended schemes have perpetual existence. They come to an end only when the number of outstanding units falls below one-half of the originally issued units. During the life of the scheme, the repurchase and the sale prices based on the net asset value (NAV) are announced and; accordingly, the transactions take place. The sale price is normally kept above the NAV. The repurchase price is fixed below the NAV. The difference from the NAV is known respectively as entry load and exit load.

On the contrary, the close-ended schemes exist for a specified period, say, normally for two to five years, after which the investment is liquidated and distributed among the unit-holders. However, the experiences show that normally the money is not returned to the investors. They are given options to switch over to some other schemes.

The income schemes assure regular returns to investors and so the mobilised resources are invested in fixed-income securities, viz. bonds and debentures and fixed deposits. On the other hand, the growth schemes try to confer on the investors the benefit of capital appreciation; and to this end, the mobilised resources are invested in equity shares. In case of money market mutual funds scheme, the funds are invested in short-tem avenues, such as treasury bills, certificate of deposits, etc.

In mutual fund market, schemes with varieties of combinations have been launched. It would be relevant to mention a few of them. Some growth schemes provide

also income-tax benefit to investors. Some schemes are sector-specific focussing on a particular sector. Some schemes maintain a balance between growth and regular income. In index schemes, corpus is allocated in proportion to the stock exchange market index. Sometimes the scheme is designed to invest the mobilised resources in other mutual funds.

Based on the variety of schemes, the mutual funds have tended to specialise in particular types of activities. For example, the equity funds invest a lion's share of their funds in equity shares. Some of the equity funds focus on capital appreciation and so they invest in the equity shares of those companies that stress on retention of earnings and not on dividend payment. On the contrary, the other equity funds invest preferably in the equity shares of those companies that prefer regular and stable dividend payment. The sector funds invest in the securities of a particular sector. Their return is subject to the performance of that sector/industry. Global funds make investment in large proportions in international financial market. They do reap the advantage of diversification insofar as the systematic risk varies among countries. But at the same time, their investment carries greater risk on account of exchange rate changes and changes in political and economic environment. Money market mutual funds invest in money market securities. Income funds invest in fixed-income securities in order to assure the investors regular and stable return. Gilt fund prefer government securities. Index funds try to replicate the performance of a particular stock market index which determines the return to the investors. Funds of fund make investment in the units of other mutual funds. The objective is to generate steady and consistent return with minimal exposure to risk. Of late, the gold exchange traded fund has come into being to offer investors a means of participating in the gold bullion market.

THE PRE-1993 SCENARIO

The mutual funds activities in India started with the Unit Trust of India (UTI) that was established in 1963 and that commenced operation in July 1964. During the first decade of its existence, it launched five open-ended schemes. Again, between 1976 and 1986, it launched one close-ended scheme, three more open-ended schemes and one close-ended equity-oriented scheme. During early 1990s, a few more schemes were launched.

In 1987, UTI's monopoly came to an end. Between 1987 and 1991, as many as seven mutual funds were set up by some nationalised banks and the insurance corporations. They were, for example, State Bank of India Mutual Fund (SBIMF), Canara Bank Mutual Fund, Life Insurance Corporation Mutual Fund (LICMF), Indian Bank Mutual Fund, Bank of India Mutual Fund, Punjab National Bank Mutual Fund and General Insurance Corporation Mutual Fund. During FY 1992-93, there were in all 59 schemes, out of which 18 were growth schemes, 14 were income schemes, 9 were income-cum-growth schemes and the rest 18 were tax-saving schemes (Jayadev, 1998).

It is true that UTI was doing at least something to mobilise resources, but the lack of competition had entailed on its efficiency. It is only with the establishment of mutual funds business by some of the major financial public sector units that the UTI too fared well. Compared to Rs. 17.676 billion during FY 1987-88, UTI mobilised Rs. 110.570

billion during FY 1992-93. In case of other mutual funds, the growth in resource mobilisation was recorded from Rs. 2.503 billion to Rs. 19.608 billion during the same period. Thus the total resources mobilised by the mutual funds jumped up around six and a-half-fold during FYs 1987-93 (RBI, 1994). But in view of the reform process initiated in the financial sector, it was essential to initiate measures of reform for the mutual funds too so that they could revamp their role in the financial intermediation in the country..

The statistics relating to the investment of the mobilised resources reveal that in FY 1992-93, a very large segment of such resources was invested in equity shares. The figure for the UTI and other public sector mutual funds was respectively 59 per cent and 53 per cent. It was still higher respectively at 91 per cent and 76 per cent in case of growth schemes. On the other hand, the figures for the investment in fixed-income securities were respectively 28 per cent and 36 per cent. The fixed-income securities attracted more of the income scheme funds. (Jayadev, 1998). In other words, the risk factor did not attract the desired amount of attention. The lack of a balanced approach to risk-return concept was never beneficial for a large number of investors in the mutual fund scheme.

If the competition generated by the public sector mutual funds had led to growth in resource mobilisation, it was the need of the day to help generate still greater amount of competition through allowing private sector companies for mutual fund business. Again, the mutual funds were not making vital disclosures about their portfolio turnover which was not desirable from the viewpoint of investors. Last but not least, the mutual fund companies had never attached importance to the calculation and disclosure of the NAV which is very relevant for judging the performance of the scheme and also for determining the repurchase price. In absence of NAV, the investors' decision to repurchase was never facilitated. All this needed ample doses of reform.

THE MEASURES OF REFORM

The reform measures were initiated in 1993 with a triadic objective of protecting investor so as to generate their confidence necessary for mobilising resources, generating competition so as to improve efficiency, and promoting innovations that is also a pre-requisite for an orderly growth of the mutual fund business.

SEBI (Mutual funds) Regulations 1993

Let us first refer to the SEBI regulations that aim not only at protecting investors but also at a systematic development of the mutual funds. The SEBI (Mutual funds) Regulations 1993 was announced in January 1993. It covered all mutual funds from the very beginning but UTI came under SEBI regulations in July 1994. The provisions of the regulation dealt, first of all, with the organisational structure. As per the regulations, a mutual fund is constituted as a trust subsequently registered with the SEBI. It has a sponsor, trustees, asset management company (AMC) and a custodian. Trustees of the mutual fund hold its property for the benefit of the unit-holders. AMC manages the affairs of the mutual fund and operates the schemes. The custodian holds the securities of the various schemes of the fund in its custody. The existing mutual funds in 1993 had to

restructure themselves on similar lines. It was mandatory for the AMC to have a minimum net worth of Rs. 50 million, 40 per cent of which was to be contributed by the sponsor. One-half of the governing body members of the trust and one-half of the directors of the AMC were to be represented by the outsiders so as to check the insiders' influence.

Secondly, the documents of the schemes to be offered were to be approved by the SEBI. The floor amount was prescribed for close-ended schemes and open-ended schemes respectively at Rs. 200 million and Rs. 500 million. The entire subscription amount was to be refunded within six months of the closure of the scheme in case the amount collected fell short of the prescribed amount.

Thirdly, as regards the investment policy, the ceiling for investment of the mobilised resources in the equity share of a company was set at five per cent of the corpus or five per cent of a company's paid-up capital carrying voting rights. Similarly, investment in debt securities by way of private placement was not to exceed 10 per cent of the total assets of the scheme in case of growth schemes and 40 per cent in case of income schemes. The concept of lock-in period was introduced in the shares acquired by promoters through preferential allotment. Investment in options products was banned and was also banned the carry forward transactions.

Fourthly, as far as distribution of surpluses was concerned, it was provided to distribute 90 per cent of the profits as dividend to the unit-holders immediately after the announcement of the annual accounts. Fifthly, the managerial remuneration was kept limited to 1.25 per cent of the weekly net assets and the initial expenses pertaining to the scheme was made confined to 6 per cent of the corpus amount.

Last but not least, the regulations dealt with the disclosure of information and the SEBI's supervision. In order to check any malpractices, the SEBI undertook regular monitoring of the mutual funds and asked them to maintain transparency and disclose the vital information. The disclosure pertained especially to trust deed detailing the duties and responsibilities of the trustees, offer document or prospectus containing the details of the scheme, the annual report and the detailed portfolio composition. SEBI approved a standard format for prospectus and specified the procedure of calculating the net asset value (NAV) that was to be declared by the mutual funds. It may be mentioned here that:

$$\text{NAV} = \frac{\text{Market value of securities held under scheme} - \text{liabilities of the scheme}}{\text{Number of units outstanding under the scheme}}$$

SEBI (Mutual funds) Regulations 1996

The 1993 regulations were revised in December 1996 in order to keep them abreast to the changing scenario in the mutual funds activities. The responsibilities of the trustee increased. They had to ensure that the AMC was managing the fund in a proper way. The minimum net worth of the AMC was raised to Rs. 100 million and the minimum requirements of the corpus amount for open-ended and close-ended schemes was withdrawn. The minimum period for listing was extended to six months. The re-issue of repurchased units in case of close-ended scheme and the conversion of close-ended scheme into an open-ended one were permitted. The mutual funds could borrow for not more than one-fifth of the net asset of the scheme for a maximum of six months to meet their liquidity requirements. The weekly publication of NAV was made mandatory. The

repurchase and resale prices could not move beyond ± 7.0 per cent of the NAV. The ceiling for managerial expenses was raised. And finally, the investment norms were made liberal to provide greater flexibility in this respect. For example, mutual funds could own up to 10 per cent of the paid-up capital in a company. Besides, the restrictions on privately placed securities and unquoted debt securities were withdrawn. In the beginning of the present decade, it was made mandatory for the mutual funds to invest in dematerialised securities.

Further Regulatory Measures

In FY 2000-01, SEBI issued a code of conduct for advertisement banning mutual funds from making assurance or claims based on past performance that might mislead the investors. They were asked to disclose the non-performing assets (NPAs) and illiquid portfolio every six month. The area of disclosure norms was extended to large unit-holding in the scheme being over a quarter of the NAV and also to securities transactions by the employees of the AMCs and trustee companies so as to check any abuse of power. The mutual funds were asked to disclose also the benchmark indices in case of equity-oriented schemes in order to enable the investor to compare the performance of a scheme with the given benchmark

In FY 2001-02, SEBI asked the AMCs to maintain records of each decision of investment in equity and debt securities and made it mandatory to launch the scheme within six months of its approval. It issued guidelines for the valuation of unlisted equity shares in order to bring uniformity in the calculation of NAV of various mutual fund schemes.

During FY 2002-03, a uniform method was evolved to calculate the sale and repurchase price of the units. The SEBI (Mutual Funds) Regulations were amended requiring that the trustees should meet at least six times a year and also to include the modalities for payment to, and recovery from, investors in case of discrepancy in calculation of NAV due to non-recording of transactions. A risk management system was evolved to be followed on a mandatory basis in the area of fund management, operations, disaster recovery and business continuity, etc. that was primarily based on existing industry practices.

Widening the Area of Mutual Funds Business

In the very beginning of 1993, as mentioned earlier, private companies were allowed to perform mutual funds business. A number of private sector companies got registered as mutual funds. By December 1994, the number of registered mutual funds, other than UTI, was 21. The private mutual fund companies raised Rs. 21.47 billion through 16 schemes. The foreign asset management companies too entered the mutual fund business through setting up domestic asset management companies under joint-venture arrangement. In 1995, the RBI permitted private sector institutions to set up Money Market Mutual Funds (MMMFs). They can invest, as mentioned earlier, in treasury bills, call and notice money, commercial paper, commercial bills accepted/co-accepted by banks, certificates of deposit and dated government securities having unexpired maturity up to one year. By December 1996, the number of mutual funds excluding UTI rose to 31, out of which 10 were in public sector and 21 were the private sector companies. In the public sector too, one mutual fund represented collaboration

with a foreign company. In October 2002 the UTI Act was repealed and UTI was bifurcated in two separate entities. While UTI-I catered to US 64 Scheme and then existing other fixed-income schemes, UTI-II known as UTI Mutual Funds dealt with NAV-based schemes. In all, the competition grew in this business. Reforms in this area made the mutual funds business more attractive with the result that there was a distinct growth in the number of mutual funds, more especially in the private sector. The number of mutual funds rose to 40 by the end of March 2007 (SEBI Bulletin, April 2007).

Liberalisation of Investment Policy

During FY 1998-99, the mutual funds were permitted to invest abroad initially within an overall limit of US \$ 500 million. A Dedicated Gilt Fund was set up to invest in government securities through which small investors accessed the government securities market. In FY 2000-01, mutual funds were permitted to invest in mortgage-backed securities of investment grade. The investment policy was further liberalised to allow open-ended schemes to invest up to 5 per cent of NAV in equity shares / equity related instruments of the unlisted companies. Investment in such equities was kept unchanged at 10 per cent for closed-ended schemes. In case of investment in listed companies, the ceiling was raised from 5 per cent to 10 per cent of NAV in respect of open-ended schemes. For overseas investment, the \$ 10 million floor was removed. SEBI was to apportion the overall ceiling of \$ 500 million among different mutual funds. The ceiling for UTI was kept at \$ 50 million.

In FY 2001-02, SEBI allowed the mutual funds to invest in listed/unlisted securities/ units of venture capital funds within specified ceiling. It clarified that the managerial fee of five per cent could be charged to the schemes as an item of general expenditure without imposing additional burden on the unit-holders. In the following financial year, the investment limit on foreign securities was raised from 4 per cent to 10 per cent of total assets of each mutual fund but between the existing floor of \$ 5 million and the ceiling of \$ 50 million. The mutual funds were allowed to invest in the equity of overseas companies having a share-holding of at least 10 per cent of an Indian company listed on the Indian stock exchange. The overall ceiling for all the mutual funds taken together to invest in ADRs/GDRs of an Indian company and foreign equity and debt securities was raised to \$ 1.0 billion, subject to individual ceiling of 10 per cent of the assets / \$ 50 million.

In FY 2003-04, the mutual funds were allowed to participate in derivatives market equity-oriented schemes for portfolio balancing. Each mutual fund could have a maximum of net derivatives position of 50 per cent of the portfolio. In January 2006, SEBI amended the Mutual Funds Regulations to permit the mutual funds to introduce Gold Exchange Traded Fund Scheme.

Some Other Incentives

The 1999-2000 Budget lowered the tax rate on income earned from mutual funds. The RBI permitted the money market mutual funds to offer cheque writing facility by allowing the unit holders to issue cheques against a savings account maintained with a designated bank. It permitted the mutual funds also to undertake forward rate agreements and interest rate swaps with a bank/ primary dealer/ financial institution to hedge their balance-sheet risk, although marking to market was not allowed. Specific sectors were

targeted for mutual funds, such as information technology, pharmaceuticals and fast-growing consumer goods. In FY 2005-06, the mutual funds were permitted to share the Unique Client Code of their schemes with their unit-holders in order to facilitate them to claim the tax benefit associated with the payment of securities transaction tax.

BROAD IMPACT OF THE REFORM MEASURES

Various forms of regulation combined with organisational restructuring, liberalised investment policy and other incentives accorded to the mutual funds in India beginning from 1993 led to far greater mobilisation of resources and financial strength of the mutual funds, as well as to greater investment of funds in the money and capital markets. Positive trends were apparent also during 1990s, but we analyse these trends during the present decade in view of the fact that there is always a lag between the implementation of the measures and the accrual of the results.

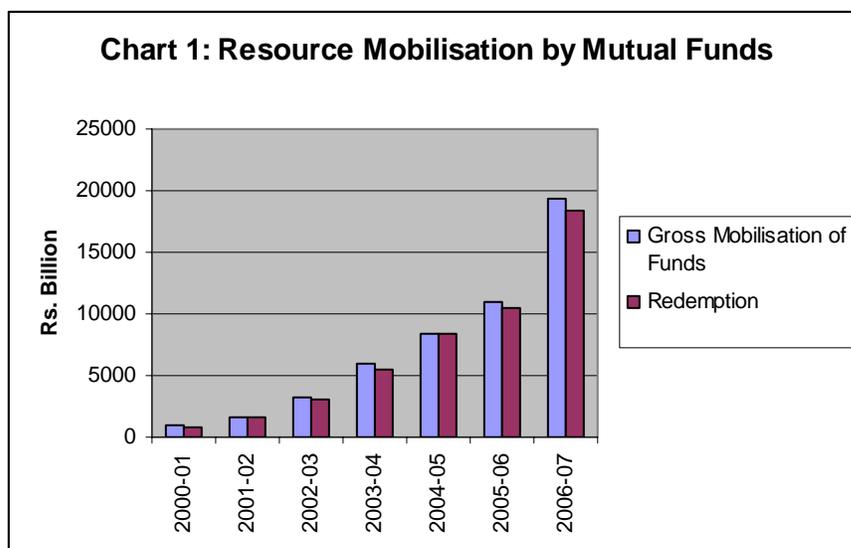
Trend in Resource Mobilisation

Let us first discuss about the mobilisation of resources by mutual funds. Table 1 shows that there was consistently great stride forward in the amount of funds mobilised from the investors through different schemes. The amount soared up over twenty-one-fold from Rs. 927.57 billion in FY 2000-01 to Rs. 19384.93 billion during FY 2006-07. Still greater difference is evident if one compares these figures with Rs. 114 billion mobilised during FY 1993-94. However, there were large redemptions that made the net amount available with the mutual funds much lower. The net amount varied between Rs. 22.0 billion and Rs. 468.08 billion during FYs 2000-07. In other words, the net amount was barely 0.26 – 9.82 per cent of the gross amount of funds mobilised.

Table 1: Resource Mobilisation by Mutual Funds: Gross and Net

| Rs. Billion | | | | |
|-------------|------------------------------------|------------|----------------------------------|---------------------------------|
| FY | Gross amount of funds mobilisation | Redemption | Net amount of funds mobilisation | Net amount as % of gross amount |
| 2000-01 | 929.57 | 838.29 | 91.28 | 9.82 |
| 2001-02 | 1645.23 | 1573.48 | 71.75 | 4.36 |
| 2002-03 | 3147.06 | 3105.10 | 41.96 | 1.3 |
| 2003-04 | 5901.90 | 5433.81 | 468.08 | 7.93 |
| 2004-05 | 8397.08 | 8375.08 | 22.00 | 0.26 |
| 2005-06 | 10981.49 | 10453.70 | 527.79 | 4.81 |
| 2006-07 | 19384.93 | 18445.08 | 939.85 | 4.85 |

Source: [www. amfiindia.com](http://www.amfiindia.com)



Looking at the resource mobilisation from the viewpoint of various groups of mutual funds, it is evident from Table 2 that the opening up of the mutual fund activities for the private sector companies has proved a boon for this area of the financial sector. The private sector companies alone have been able to mobilise a lion's share of the resources during the entire period of the present decade. In FY 2006-07, they accounted for 82.5 per cent of gross mobilisation and 84.1 per cent of the net mobilisation. The UTI Mutual Fund's share was barely 4 – 5 per cent and the rest 10 – 11 per cent of the mobilised funds were shared by other public sector units.

Table 2: Resource Mobilisation by Different Categories of Mutual Funds

Rs. Billion

| FY | UTI | | Public Sector-sponsored Funds | | Private Sector Mutual Funds | | Total | |
|---------|------------------|----------------|-------------------------------|------------------|-----------------------------|------------------|---------------------|-------------------|
| | Gross | Net | Gross | Net | Gross | Net | Gross | Net |
| 2000-01 | 124.13 | 3.22 | 61.92 | 15.21 | 743.52 | 92.92 | 929.57 | 111.35 |
| 2001-02 | 7.49 | - 72.84 | 136.13 | 14.84 | 1462.67 | 129.47 | 1645.23 | 71.37 |
| 2002-03 | 70.62 | - 94.34 | 286.25 | 18.95 | 2789.86 | 121.22 | 3147.06 | 45.83 |
| 2003-04 | 239.93 | 25.97 | 315.48 | 16.67 | 5346.49 | 425.45 | 5901.90 | 468.09 |
| 2004-05 | 466.56 | - 27.22 | 565.89 | - 26.77 | 7364.63 | 76.00 | 8397.08 | 22.01 |
| 2005-06 | 462.20 | 34.24 | 1372.26 | 63.79 | 9147.03 | 429.77 | 10981.49 | 527.80 |
| 2006-07 | 1246.07 (6.4) | 42.26 (4.5) | 2140.13 (11.0) | 107.20 (11.4) | 15999.72 (82.5) | 791.34 (84.1) | 19384.93 (100.0) | 940.80 (100.0) |

Source: www.amfiindia.com

Again, the mobilisation of resources varied from one scheme to the other. Looking at the latest data for FY 2006-07 in Table 3, one finds that the open-ended schemes have proved a more effective tool to mobilise resources as they accounted for over 93 per cent of the gross mobilisation of funds. But the open-ended schemes involved large amount of redemptions with the result that the close-ended scheme dominated as far as the net resource mobilisation was concerned.

Table 3: Scheme-wise Resource Mobilisation during FY 2006-07

| Rs. Billion | | | |
|--------------------------|--------------|------------|------------|
| Scheme | Gross Amount | Redemption | Net amount |
| A. Open-ended | 18001.58 | 17762.58 | 239.00 |
| B. Close-ended | 1383.35 | 682.50 | 700.85 |
| Total | 19354.93 | 18445.08 | 939.85 |
| A. Income/Debt Schemes | 18396.68 | 17756.01 | 640.68 |
| i) Liquid money market | 16267.90 | 16218.05 | 49.85 |
| ii) Gilt | 18.53 | 28.16 | - 9.64 |
| iii) Debt | 2110.26 | 1509.80 | 600.46 |
| B. Growth/Equity Schemes | 943.51 | 661.45 | 282.06 |
| i) ELSS | 46.69 | 2.16 | 44.53 |
| ii) Others | 896.83 | 659.29 | 237.53 |
| C. Balanced Schemes | 44.73 | 27.62 | 17.11 |
| Total | 19354.93 | 18445.08 | 939.85 |

Source: *SEBI Bulletin*, April 2007

Again, the income/debt schemes mattered much in the gross resource mobilisation. Their share was as large as 95 per cent. Even among these schemes, the investors attached greater importance to liquidity and so they preferred the liquid money market schemes. These schemes helped mobilise 84 per cent of the resources during FY 2006-07. The investors did not like gilt schemes and so their share was not even one-quarter of one per cent. However, those debt schemes where the return was not very assured accounted for over 10 per cent of the gross resource mobilisation.

Yet again, the investors showed interest for growth/equity schemes but they were not as keen for buying them as they were in case of income/debt securities. The growth/equity schemes accounted for around 5 per cent of the gross resource mobilisation during FY 2006-07. The equity-linked saving schemes in this group were not favoured by the investors. Nor were favoured the balanced schemes.

It may be noted that the net resource mobilisation indicates similar preference of the investors. The income/debt schemes were responsible for over two-thirds of the net resource mobilisation. A lion's share of the rest was represented by growth/equity schemes. The balanced schemes never figured large.

Growth in Net Assets under Management

After analysing the resource mobilisation aspect of the mutual funds, let us move to their investment behaviour. When there is growth in their resource mobilisation activities, there will be apparently an uptrend in their investment activities or in the net assets under management. The growth in the amount of assets under management is an indicator of their financial strength.

Table 4: Growth in Net Assets under Management of Mutual Funds

| At the end of FY | Billions of Rupees | | | | | % Change over Previous Year |
|------------------|--------------------|---------------------|--------------------|---------------------|--------|-----------------------------|
| | UTI | Other Public Sector | Private Sector | Total | | |
| 2000-01 | 580.17 | 68.40 | 257.30 | 905.87 | - | |
| 2001-02 | 514.34 | 82.04 | 409.56 | 1005.94 | 11.4 | |
| 2002-03 | 135.16 | 104.26 | 555.22 | 794.64 | -21.01 | |
| 2003-04 | 206.17 | 119.12 | 1070.87 | 1396.16 | 75.60 | |
| 2004-05 | 207.40 | 113.74 | 1174.87 | 1496.01 | 7.16 | |
| 2005-06 | 295.19 | 208.29 | 1815.15 | 2318.62 | 54.99 | |
| 2006-07 | 354.88 (10.87) | 287.25 (8.80) | 2671.75 (81.86) | 3263.88 (100.00) | 40.77 | |

Source: www.amfindia.com

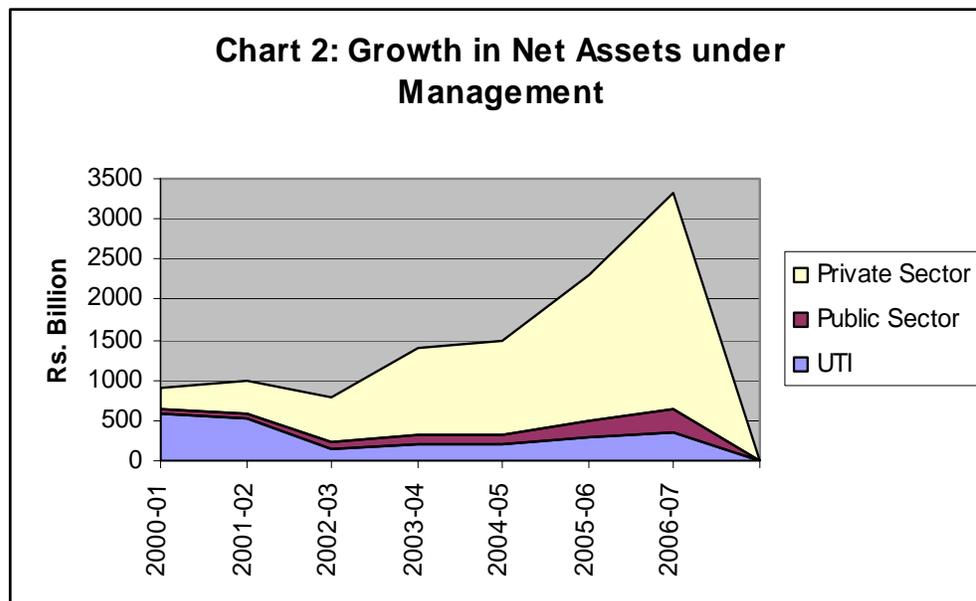


Table 4 presents the net asset position at the end of the financial years beginning from 2000-01 in totality and also in different groups of mutual funds. The figures reveal fast

growth in assets under management from Rs. 905.87 billion at the end of March 2001 to Rs. 3263.88 billion at the end of March 2007. If one compares these figures with Rs. 470 billion or those at the end of March 1993, it is really a great stride. Except for FY 2002-03 when there was a drop in the amount of assets, the yearly change varied between 7.16 per cent and as big as 54.99 per cent making a simple annual average growth rate of 28.15 per cent. Who is responsible for such a big jump forward in the assets? It is primarily the private sector mutual funds that shared more than four-fifths of the total assets under management at the end of FY 2006-07. Thus the policy of the Indian Government to attract the private sector companies in the mutual fund business was definitely a correct step. Even among the private sector mutual funds, it was primarily those mutual funds that were set up as joint-ventures but having Indian domination that accounted for over two-fifths of the total assets under management among the private sector companies at the end of FY 2006-07. The rest three-fifths were almost equally shared by purely Indian companies and those joint-venture companies where foreign companies are dominant (amfiindia.com).

Again, the composition of the assets reveals some interesting features. Table 5 presents the composition of assets under management under various segments during the present decade. The figures reveal that up to FY 2002-03, debt securities dominated the scene. Their share was as high as three-fifths of the total asset under management. But then their share began to squeeze moving down to around a quarter in FY 2005-06, although in the following financial year, there was some appreciation. The share of equity shares remained less than a quarter till FY 2004-05, but then it tended to ascend. Money market instruments were never a cherished destination for the mutual funds during the early years of the present decade. But in the recent past, they have improved their share hovering around a quarter of the total asset under management. In fact, the mutual funds are more concerned about higher return and this is perhaps the reason why they have disfavoured the government securities. The share of government securities remained confined to a meagre of 5 per cent.

Table 5: Various Segments of Net Assets under Management

| At the end of FY | Rs. Billion | | | | | |
|------------------|-------------------------|------------------|--------------------------|-----------------------|------------------|--------------------|
| | Assets under Management | | | | | |
| | Debt | Equity | Money market instruments | Government securities | Others | Total |
| 2000-01 | 488.63 (53.9) | 134.83 (14.9) | 41.28 (4.6) | 23.17 (2.6) | 217.96 (24.1) | 905.87 (100.0) |
| 2001-02 | 557.88 (55.5) | 138.52 (13.8) | 80.69 (8.0) | 41.63 (4.1) | 187.22 (18.6) | 1005.94 (100.0) |
| 2002-03 | 475.64 (59.9) | 98.87 (12.4) | 137.34 (17.3) | 39.10 (4.9) | 43.69 (5.5) | 794.64 (100.0) |
| 2003-04 | 625.24 (44.8) | 236.13 (16.9) | 417.04 (29.9) | 60.26 (4.3) | 57.49 (4.1) | 1396.16 (100.0) |
| 2004-05 | 476.05 (31.8) | 367.57 (24.6) | 540.68 (36.1) | 45.76 (3.1) | 65.94 (4.4) | 1496.00 (100.0) |
| 2005-06 | 602.78 | 928.67 | 615.00 | 31.35 | 140.82 | 2318.62 |

| | | | | | | |
|---------|-------------------|-------------------|------------------|----------------|-----------------|--------------------|
| | (26.0) | (40.1) | (26.5) | (1.3) | (6.1) | (100.0) |
| 2006-07 | 1193.22 (36.6) | 1133.86 (34.7) | 720.06 (22.1) | 22.57 (0.7) | 193.17 (5.9) | 3262.88 (100.0) |

Source: *amfindia.com*

Do Mutual Funds Influence the Stock Market Index ?

The Indian secondary market has two significant players – one being the foreign institutional investors and the other being the mutual funds. As it is evident from Table 6, the mutual funds have transacted both in debt securities and equity shares. In both the cases, the magnitude of transactions has consistently moved up. In equities, transactions --purchases plus sales-- moved up from Rs. 315.19 billion in FY 2000-01 to Rs. 2628.34 billion in FY 2006-07. The total transactions – purchase plus sales – in debt securities rose from Rs. 220.01 billion in FY 2000-01 to Rs. 2549.23 billion in FY 2006-07. In other words, the participation of the mutual funds in the secondary market has experienced an ascending trend which is definitely conducive for this market.

Table.6: Mutual Funds' Investment in Secondary Capital Market in 2000s

Rs. billion

| FY | Equity | | | Debt | | | % Share of Mutual funds in BSE & NSE Equity Turnover (cash segment) |
|---------|----------------|------------|----------------|----------------|------------|----------------|---|
| | Gross Purchase | Gross Sale | Net Investment | Gross Purchase | Gross Sale | Net Investment | |
| 2000-01 | 113.76 | 201.43 | - 27.07 | 135.12 | 84.89 | 50.23 | 61.30 |
| 2001-02 | 120.98 | 158.94 | -37.96 | 335.57 | 225.94 | 109.63 | 3.41 |
| 2002-03 | 145.21 | 165.88 | -20.67 | 466.64 | 340.59 | 126.04 | 3.34 |
| 2003-04 | 366.64 | 353.56 | 13.08 | 631.70 | 404.69 | 227.01 | 4.49 |
| 2004-05 | 450.45 | 445.97 | 4.48 | 621.86 | 451.99 | 169.87 | 5.40 |
| 2005-06 | 1003.89 | 860.81 | 143.08 | 1095.51 | 730.66 | 364.86 | 7.81 |
| 2006-07 | 1359.48 | 1268.86 | 90.62 | 1537.33 | 1011.90 | 525.43 | 9.05 |

Source: *SEBI Bulletin*, various issues

Again, the figures in Table 6 reveal that except for FY 2000-01 which was an abnormal year, the share of the mutual funds in total equity turnover at the cash segment of Bombay Stock Exchange and National Stock Exchange has gone on increasing consistently from 3.41 per cent to 9.05 per cent between FY 2001-02 and FY 2006-07. But this percentage is too low to influence sizeably the stock market index. Moreover, to be firm on this issue, we have computed the correlation co-efficient between the monthly figures of the net invest of mutual funds in equity shares at the BSE and the monthly average (closing) of BSE SENSEX during FY 2006-07. The correlation co-efficient is (-) 0.3726 which shows that there is no influence of mutual funds on the stock market index. However, one cannot negate the possibility of mutual funds influencing the stock market index in a particular sector where their participation is concentrated.

SUMMING UP

Reforms in the mutual fund business have been multi-pronged. Healthy regulations designing the organisational structure, resource mobilisation, investment, valuation and disclosure norms and focussing on SEBI's supervision have been significant. The inclusion of private sector companies both Indian and foreign in mutual fund business brought in competition and thereby helped improve efficiency. The mutual funds were given variety of incentives and the area of their operation was widened. All this had a positive impact on their functioning. The magnitude of resource mobilisation soared up fast. However, this was accounted for primarily by the private sector companies. Again, the open-ended schemes proved more attractive to the investors than the close-ended schemes. Similarly, the investors showed preference for income/debt schemes and not so much for growth/equity schemes.

The positive impact of reform was evident in fast growing net assets under management. In this case too, the private sector companies fared far well. Investment in debt and equity formed the largest share, although investment in money market instrument has also improved in recent years. The government securities lagged far behind on this issue.

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Financial Infrastructure & Economic Performance (1971-2004):

Causality-Cointegration using Unrestricted Vector Error Correction Models

Manoj Subhash Kamat, Manasvi M. Kamat and I. BhanuMurthy**

Using contemporary models this paper explores the time-series properties of financial infrastructure and economic growth indicators to investigate the nexus between developments in financial intermediation with the economic growth for India over the 1971-2004 periods. Both over short-run and the long-run perspective the paper seeks answer; whether the financial infrastructure variables are complementary or a substitute for financial and economic performance? and in what way economic growth is affected by the financial infrastructural development indicators? We find evidence in favor of a short run “financial infrastructure led economic growth”. Finance is found to be a leading sector only in the short-term link in Granger causality tests with stationary variables. The study provides robust empirical evidence in favor of supply leading hypothesis for the Indian economy.

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Introduction

It is generally experienced that the advanced economies have well established financial systems ably backed by sophisticated financial infrastructure. Financial infrastructure or intermediation comprises of closely connected institutions, agents, regulations, transactions and market practices. Though close observations on the subject suggest that improvements in such financial arrangements strongly correlate with economic performance, mere existence of association may not necessarily imply causation. A quick survey of the recently available empirics on the subject reviewed herein, or the one by Niles (1994) published a decade earlier, remains inconclusive.

Researchers like that of Levine and Zervos (1998), Khan and Senhadji (2000) show that a well-established financial market can not only can mobilize capital and diversify risks between market agents, can also be able to provide different types of services which can stimulate economic growth. Conceptually, well-developed financial infrastructure is important for growth due the efficient underlying functions the financial institutions are expected to perform. At one level financial intermediary help transfer of funds in exchange for goods, services, or promises of future return & enable the process of saving and capital accumulations. At a deeper level the financial infrastructure should be seen as one that perform several transformative services like that of accepting deposits as liability and converting them into assets such as loans (liability-asset transformation), by providing large volumes of finance on the basis of unit capital (size transformation), by reducing risk through aggregation and enabling it to be carried by those more willing to bear it (risk-transformation) and by providing borrowers with loans of requisite maturities (maturity transformation).

It thus follows from the above proposition that the evolution of financial infrastructure has a great impact on the economic activity for any given nation. If it is true, then domestic financial infrastructure development is also expected to have significant liaisons with the economic growth. Using time-series models this paper firstly explores the time-series properties of financial infrastructure development and economic growth and secondly through the Unrestricted Vector Error Correction framework discusses the nexus between developments of financial intermediation with the economic growth activity for India over different periods ranging 1971 through 2004. Both over short-run and the long-run perspective the paper seeks answer; whether the financial infrastructure variables are complementary or a substitute for financial and economic performance? In what way economic growth is affected by financial development? And finally to which extent has the thrust on financial infrastructure affected the growth in the economic activity. The principle question underhand is thus to re-examine the “infrastructure development, economic & stock market growth puzzle” from a developing economy perspective.

Objectives and Significance

The objective of the present study is to contribute to the existing debate on financial development and the economic growth nexus, by analyzing the time-series for India over a longer time-frame of 34 years. The present study aims at three-pronged objectives. This work is the foremost attempt to quantify the extent and the magnitude of select financial infrastructure development indicators on the economic and the stock market performance. Secondly, we test the time-series properties of those variables to analyze the dynamic co-integrating behavior of the time-series in the short run and the long run. Finally, statistically detect the direction of causality (cause and effect relationship) in a multivariate setting when temporally there is a lead lag relationship between financial infrastructure development indicators with that of the economic activity.

Understanding the causal relationship between financial development and economic growth is important in enhancing the efficacy of policy decisions for a developing country like India. The importance of the debate for developing countries comes from the fact it has important policy implications for priorities that should be given to reforms of the financial sector by public authorities. The pinpoint focus on creation of an efficient infrastructure network can ignite development in other sectors, while its shortage or over-expansion can raise costs and create disincentives. Moreover, the causality issue between financial activity and economic growth in such countries is still very far from being settled. Our study is different from the rest in many ways. Earlier studies are based on cross-country analysis, moreover relate to developed countries alone. Related researches done in the past three decades mostly focused on the role of financial development in stimulating economic growth, without taking into account of the stock market development. Apart from infrastructure-growth debate we proceed to deliberate on the specific effect of post-liberalization financial intermediary development on the financial sectors aiming at developing contribution in the economic growth process. Thus, the investigated issue will be useful either for researchers and policy makers looking for optimal policies to institute competitive economic growth.

In the remainder of the paper, we review the available literature in section 2. Sections 3 & 4 describe the data and lay the econometric methodology respectively. Section 5

presents and analysis through the results obtained from the different tests, while the final section (6) concludes.

Underlying Theories and Empirical Evidence

Theoretically, in the environment friendly, appropriate technology based, decentralized Alternative Development Model, finance is not a factor of crucial in economic development. In the conventional model of modern industrialism however the perceptions in this regard vary a great deal, Bhole (1999). The theoretical literature and cross-sectional results on the topic can be loosely grouped into three main categories; Supply Leading approach, a Demand Following approach and a Cautionary or Feedback approach. According to the first, financial activity is considered as a major determinant of real activity where well functioning financial systems are crucial for economic growth. The “finance-led growth” hypothesis postulates the “supply-leading” relationship between financial and economic development. It is argued that the existence of the financial sector as well-functioning financial intermediations in channeling the limited resources from surplus units to deficit units, would provide efficient allocation resources thereby leading the other economic sectors in their growth process. Indeed, a number of studies (from Schumpeter, 1912 to Levine, 1997) have argued that the development of financial sector has significantly promoted economic development. For the second approach, financial activity is taken to be a result of economic growth where growing activities require more and more funds for expansion. The “growth-led finance” hypothesis states that a high economic growth may create demand for certain financial instruments and arrangements and the financial markets are effectively response to these demands and changes. In other words, this hypothesis suggests a “demand following” relationship between finance and economic developments. Such impact of economic growth on the financial development has been documented in Robinson (1952) and Romer (1990), among others. The third, “feedback” hypothesis suggests a two-way causal relationship between financial development and economic performance. In this hypothesis, it is asserted that a country with a well-developed financial system could promote high economic expansion through technological changes, product and services innovation. This in turn, will create high demand on the financial arrangements and services. As the banking institutions effectively

response to these demands, then these changes will stimulate a higher economic performance. Therefore, both financial development and economic growth are positively interdependent and their relationship could lead to feedback causality. The work of Luintel and Khan (1999), among others, is supportive of this view.

Though the relationship between financial development and economic growth has been extensively studied in the recent decades, the issue is not new in development economics and may go back at least to Schumpeter (1912) who stresses the importance of financial services in promoting economic growth. The attempt of Patrick (1966) is among the foremost in discussing the association between economic growth and financial development in under-developed countries. Cameron (1967) has shown that in the present developed countries, the developed financial systems generally evolved during the early stages of industrialization. The literature by Greenwood and Jovanovic (1990), Bencivenga and Smith (1991), Roubini and Sala-I-Martin (1992), Pagano (1993), King and Levine (1993b), Berthelemy and Varoudakis (1996), Greenwood and Smith (1997) support the view that financial development (repression) has positive (negative) effects on economic growth in the steady state. Of the above, the studies by Roubini and Sala-I-Martin (1992), King and Levine (1993), Fry (1997), Levine and Zervos (1998) widely use cross-sectional techniques to support the hypothesis that financial sector development is growth enhancing and consequently financial repression policies are harmful for economic growth. Robinson (1962) for example, has suggested, in an original position, that financial development follows economic growth. Newlyn (1977) considers the role of finance in development as of subsidiary in nature. Likewise, Lucas (1988) concludes that the importance of financial markets is badly overstressed. A similar conclusion is shared by Chandavarkar (1992) who considers that finance is never been listed by the pioneers of development economics as a key development factor. Building on the work of Schumpeter (1912), Gurley and Shaw (1955), Goldsmith (1969), McKinnon (1973) and Shaw (1973) propounded the financial "liberalization paradigm", according to which the public regulation of the banking system reduces the quality and quantity of capital accumulation. The World Bank (1989) defends this liberal views and state, that an efficient financial system help to grow, partly by mobilizing additional financial resources and partly by attracting those resources to the best uses.

Earlier Causality pattern based studies include that of Sims (1972), Gupta (1984), Jung (1986), Toda and Phillips (1993), Murende and Eng (1994), Demetriades and Hussein (1996), Arestis and Demetriades (1996) and Kul and Khan (1999) find that the causality pattern varies across countries and with the success of financial liberalization policies implemented in each country and with the development level of the financial sector generally.

Data Sources and Variables

The necessary secondary data for India (in Indian Rupees) for the period 1971-2004 is adjusted for inflation using the Wholesale Price Index (WPI) and emerge from number of sources namely, the Handbook of Statistics on the Indian Economy, published and the annual reports published by the Reserve Bank of India, the Handbook of Statistics on the Indian Securities Markets as well as the annual reports of the Securities Exchange Board of India, the website of the Bombay Stock Exchange, and the other regular publications on capital markets by the Centre for Monitoring of the Indian Economy (CMIE).

To measure the dependent variable economic growth (**EG**), we use the growth rate in Gross Domestic Product (GDP) at factor cost & current prices, based on new series with 1993-94 as the base year. This is in line with the standard literature on the ties between economic growth and financial activity and specifically in the recent work on the subject by Demetriades and Hussein (1996), Luintel and Khan (1999) and others. The other indicator of financial development used in the model is Financial Activity (**FA**) emerging from productive investments by the private corporate sector and is defined as the ratio of Gross Capital Formation (GCF) by the Private Sector to GDP. The stage of market development, of the macro economy, the interaction of institutions, markets and market practices, all have a positive influence on the real decisions on the firm and therefore, on the overall capital formation in the corporate sector. The second variable, (**FS**) is the ratio of Financial Savings to GDP. Financial savings is measured by the difference between M3 and M1. The subtraction of the money stock (M1) aims at getting the quasi-liquid assets considered as the main source of investment financing. A rising ratio of financial savings to GDP may reflect an improvement in bank deposits and / or other financial resources outside the

banking sector, which are likely to be used for accumulation and growth. Financial Deepening (**FD**) indicator is the ratio of the total assets of the financial system to nominal GDP and is calculated as the ratio of the liquid liabilities (M3) to the nominal GDP. M3 is a broader measure of money stock in accordance with the inside money model of McKinnon (1973) where the accumulation of real money balances is a required condition for investment. An increase in this ratio may be interpreted as an improvement in financial deepening in the economy. In order to avoid the simultaneity bias in our equations, the Liquidity Adjustment (**LA**) measure is included as the control variable. We choose Bank Rate as monetary authority's tool in adjusting the market liquidity and economic performance, as the intervention of government or monetary authority could affect the relationship between financial and economic development. Government through the central bank can adjust the liquidity level in the equity market and then influence the ability of banking institutions in supplying their funds. The bank rate in India apart from the basic rate of refinance and rediscounting facilities is also the reference rate to which all interest rates on advances from the bank, the penal rates on the shortfall in the reserve requirements, and the maximum term deposit rates of the banks are linked. An increase in the bank rate will reduce any lead to lower investments, the level of market liquidity and then slow down the economic activity.

Research Techniques

Unit Root Testing: In the first stage, the order of integration is tested using the Augmented Dicky Fuller (ADF) and the Philip-Perron (PP) unit root tests. Unit Root tests are conducted to verify the stationarity properties (absence of trend and long-run mean reversion) of the time series data so as to avoid spurious regressions. A series is said to be (weakly or covariance) stationary if the mean and autocovariances of the series do not depend on time. Any series that is not stationary is said to be non-stationary. A series is said to be integrated of order d, denoted by I(d), if it has to be differenced d times before it becomes stationary. If a series, by itself, is stationary in levels without having to be first differenced, then it is said to be I(0). Consider the equation:

$$y_t = \rho y_{t-1} + x_t' \delta + \varepsilon_t \quad (1)$$

Where x_t are optional exogenous regressors which may consist of constant, or a constant and trend, ρ and δ are parameters to be estimated, and ε_t is assumed to be white noise. If $|\rho| \geq 1$, y is a nonstationary series and the variance of y increases with time and approaches infinity if $|\rho| < 1$, y is a (trend) stationary series. Thus, the hypothesis of (trend) stationarity can be evaluated by testing whether the absolute value of ρ is strictly less than one.

We use ADF test using MacKinnon (MacKinnon, 1991) critical values. This test constructs a parametric correction for higher-order correlation by assuming that the y series follows an AR(p) process and adding p lagged difference terms of the dependent variable y to the right-hand side of the test regression

$$\Delta y_t = \alpha y_{t-1} + x_t' \delta + \beta_1 \Delta y_{t-1} + \beta_2 \Delta y_{t-2} + \dots + \beta_p \Delta y_{t-p} + v_t \quad (2)$$

This augmented specification is then used to test the hypothesis

$$H_0 : \alpha = 0, \text{ against } H_1 : \alpha < 0 \quad (3)$$

If we could not reject the null hypothesis $H_0: \alpha = 0$, it meant that $\alpha = 0$ and the series α contains a unit root. Where $\alpha = \rho - 1$ and evaluated using the conventional t-ratio for α

$$t_\alpha = \hat{\alpha} / (se(\hat{\alpha})) \quad (4)$$

Where $\hat{\alpha}$ is the estimate of α and $se(\hat{\alpha})$ is the coefficient standard error

An important result obtained by Fuller is that the asymptotic distribution of the t-ratio for α is independent of the number of lagged first differences included in the ADF regression. ADF tests are tried with constant and trend terms, and with constant only. Inclusion of a constant and a linear trend is more appropriate, since the other two cases are just special cases of this more general specification. However, including irrelevant regressors in the regression will reduce the power of the test to reject the null of a unit root. For considering appropriate lag lengths, we use the VAR process in conjunction with the Lag range selection test.

Phillips (1987) and Phillips-Perron (1988) suggest an alternative approach for checking the presence of unit roots in the data. They formulate a nonparametric test

to the conventional t-test which is robust to a wide variety of serial correlation and time dependent heteroscedasticity. The PP unit root test requires estimation of the following equation (without trend).

$$X_t = \mu_t + \sum_{i=1}^T X_{i-T} + u_t \quad (5)$$

The bias in the error term results when the variance of the true population differs from the variance of the residuals in the regression equation. PP test statistic reduces to the DF test-statistic when auto correlation is not present.

$$\sigma_u^2 = \lim_{T \rightarrow \infty} T^{-1} \sum_{t=1}^T E(u_t^2) \quad (6)$$

Consistent estimators of σ^2 and σ_u^2 are

$$S_u^2 = T^{-1} \sum_{t=1}^T (u_t^2) \quad (7)$$

$$S_{Tk}^2 = T^{-1} \sum_{t=1}^T (u_t^2) + 2T^{-1} \sum_{t=1}^k \sum_{j=t+1}^T u_t u_{t-j} \quad (8)$$

Where k is the lag truncation parameter used to ensure that the auto-correlation is fully captured.

The PP test-statistic under the null-hypothesis is of I(0)

$$Z(t_\mu) = \langle S_u | S_{tk} \rangle t_\mu - \frac{1}{2} (S_k^2 - S_u^2) \left[S_{tk} \left\{ T^2 \sum_{t=2}^T (Y_t - Y_{t-1})^2 \right\}^{\frac{1}{2}} \right] \quad (9)$$

Multivariate Cointegration: The Cointegration tests are applied to detect the presence of any long-term relationship between the variables. Engle and Granger (1987) points that a linear combination of two or more non-stationary series may be stationary and if such a stationary linear combination exists the non-stationary time series are said to be cointegrated. The stationary linear combination is called the cointegrating equation and may be interpreted as a long-run equilibrium relationship among the variables. The purpose of the cointegration test is to determine whether a group of non-stationary series is cointegrated or not. For two series to be cointegrated, both need to be integrated of the same order, 1 or above. If both series are stationary or integrated of order zero, there is no need to proceed with cointegration tests since standard time series analysis would then be applicable. If both series are integrated of different orders, it is safely possible to conclude non-cointegration. Lack of cointegration implies no long-run equilibrium among the

variables such that they can wander from each other randomly. Their relationship is thus spurious. For any k endogenous variables, each of which has one root, there will be 0 to $k-1$ cointegrating relationships. The Residual-based approach proposed by Engle and Granger (1987) and the maximum likelihood method developed by Johansen and Juselius (1990). This test helps ascertain the existence of a long-run equilibrium relationship between economic growth and select financial development indicators in multivariate setting.

As suggested above, a set of variables is said to be cointegrated if a linear combination of their individual integrated series $I(d)$ is stationary. All the time series, are individually subjected to unit root analysis to determine their integrating order and if they are stationary of a given order, in order to estimate the cointegration regression equation, we regress EG on other financial indicators as follows

$$EG_t = \beta_1 + \beta_2 GFA_t + \beta_3 GFS_t + \beta_4 GFD_t + \beta_5 GLA_t + u_t \quad (10)$$

This can respectively, be written as

$$u_t = (EG_t - \beta_1 - \beta_2 FA_t - \beta_3 FS_t - \beta_4 FD_t - \beta_5 LA_t) \quad (11)$$

If the residuals, u_t from the above regressions are subject to unit root analysis are found $I(0)$ i.e. stationary, then the variables are said to be cointegrated and hence interrelated with each other in the long run or equilibrium. If there exists a long term relationship between the above two series, in the short run there may be a disequilibrium. Therefore one can treat the error term u_t in the above equations as the “equilibrium error”. This error term can be used to tie the short run behavior of the dependent variable to its long-run value.

The error correction mechanism (ECM) corrects for disequilibrium and the relationship between the two cointegrating variables can be expressed as ECM as under.

$$\Delta EG_t = \alpha_0 + \alpha_1 \Delta FA_t + \alpha_2 \Delta FS_t + \alpha_3 \Delta FD_t + \alpha_4 \Delta LA_t + \alpha_5 u_{t-1} + \varepsilon_t \quad (12)$$

Where, Δ denotes the first difference operator, ε_t is the random error term and u_{t-1} in equation 11 is the lagged term consisting of

$$u_{t-1} = (EG_t - \beta_1 - \beta_2FA_t - \beta_3FS_t - \beta_4FD_t - \beta_5LA_t) \text{ and} \quad (13)$$

ECM equation 12 states that the dependent variable depends not only on the specified independent variables but also on the equilibrium term. If the latter is non zero, the model is out of equilibrium. If the concerned independent variable is zero and u_{t-1} is positive, the dependent variables are too high to be in equilibrium. That is, the respective dependent variable is above its equilibrium value of $(\alpha + \alpha_1 \text{independent variables}_{t-1})$. Since α_2 is expected to be negative, the term $\alpha_2 u_{t-1}$ is negative and, therefore, dependent variable will be negative to restore the equilibrium. That is, if the dependent is above its equilibrium value, it will start falling in the next period to correct the equilibrium error. By the same token, if u_{t-1} is negative, dependent variable is below its equilibrium value), $\alpha_2 u_{t-1}$ will be positive, leading dependent variable to rise in period t .

The post-regression diagnostic tests are conducted to detect probable bias (es) on account of the multicollinearity, autocorrelation and heteroskedastic variance in the variables under study. The reported values of post-regression Durbin Watson, Variance Inflating Factor / Tolerance Limits (VIF & TOL) , and the Szroeter's test statistic detects autocorrelation, multicollinearity and presence of heteroscedasticity in the variables respectively. As a thumb rule it is assumed; Durbin Watson statistic value of around 2, assumes there is no first-order autocorrelation either positive or negative, the larger the VIF, or closer TOL is to one, greater the evidence that a variable is not collinear with the other regressors. The Szroeter's statistic test helps to test the null hypothesis of constant variance against alternate hypothesis of monotonic variance in variables while the Ramsey RESET omitted variable test using powers of the fitted values of regressions are used to check the null hypothesis that the model has no omitted variables. Since the Robust standard errors are reported in the regression results it should however be noted that the robust standard errors are much greater than the normal standard errors and therefore the robust t ratios are much smaller than normal t ratios.

In a multivariate system, the alternate cointegration procedure suggested by Johansen (1988), and Johansen and Juselius (1992) is very popularly followed in the recent

literature. The Johansen and Juselius framework provides suitable test statistics {maximum eigen values and the trace test) to test the number of cointegrating relationship, as well as the restrictions on the estimated coefficients and involves an estimation of a vector error correction model (VECM) to obtain the likely-hood ratios (LR). The VECM runs in the following sequence

$$\text{Consider a VAR of order } p \quad y_t = A_1 y_{t-1} + \dots + A_p y_{t-p} + Bx_t + \varepsilon_t \quad (14)$$

Where y_t is a k -vector of non-stationary $I(1)$ variables, x_t is a d -vector of deterministic variables, and ε_t is a vector of innovations. We may rewrite this VAR as

$$y_t = \Pi y_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \Delta y_{t-i} + Bx_t + \varepsilon_t \quad (15)$$

$$\text{where } \Pi = \sum_{i=1}^p A_i - I, \text{ and } \Gamma_i = - \sum_{j=i+1}^p A_j \quad (16)$$

Granger's representation theorem asserts that if the coefficient matrix ρ has reduced rank $r < k$, then there exist $k \times r$ matrices α and β each with rank r such that $\alpha = \alpha \beta'$ and $\beta' y_t$ is $I(0)$. r is the number of cointegrating relations (the cointegrating rank) and each column of β is the cointegrating vector. The elements of α are known as the adjustment parameters in the VEC model. Johansen's method is used to estimate the Π matrix from an unrestricted VAR and to test whether we can reject the restrictions implied by the reduced rank of Π . We assume that the level data have no deterministic trends and the cointegrating equations have intercepts such as

$$H_1^*(r) : \Pi y_{t-1} + \beta x_t = \alpha (\beta' y_{t-1} + \rho_0) \quad (17)$$

In order to determine the number of r cointegrating relations conditional on the assumptions made about the trend, we can proceed sequentially from $r = 0$ to $r = k-1$ until we fail to reject. The trace statistic reported in the first block tests the null hypothesis of r cointegrating relations against the alternative of k cointegrating relations, where k is the number of endogenous variables, for $r = 0, 1, \dots, k-1$. The alternative of k cointegrating relations corresponds to the case where none of the series has a unit root and a stationary VAR may be specified in terms of the levels of all of the series. The trace statistic for the null hypothesis of r cointegrating relations whereas the max statistic tests the null hypothesis of r cointegrating relations against

the alternative of $r + 1$ cointegrating relations. The trace statistic (tr) and the max statistics (max) are computed as

$$LR_{tr}(r|k) = -T \sum_{i=r+1}^k \log(1 - \lambda_i) \quad \text{and} \quad LR_{max}(r|r+1) = -T \log(1 - \lambda_{r+1})$$

which can be transformed as $= LR_{tr}(r|k) - LR_{tr}(r+1|k)$ for $r = 0, 1, \dots, k-1$. (18)

Where λ_i is the i -th largest eigenvalue of the Π matrix in equation 16.

Causality Using Unrestricted VAR: Ordinary linear regression or correlation methods cannot be used to establish a causal relation among variables. In particular it is well known that when two or more totally unrelated variables are trending over time they will appear to be correlated simply because of the shared directionality. Even after removing any trends by appropriate means, the correlations among variables could be due to causality between them or due to their relations with other variables not included in the analysis. Granger (1988) introduced a useful method to test for Granger causality between two variables. The basic idea is that if changes in X precede changes in Y , then X could be a cause of Y . This involves an unrestricted regression of Y against past values of Y , with X as the independent variable. The restricted regression is also required in the test, regressing Y against past values of Y only. This is to verify whether the addition of past values of X as an independent variable can contribute significantly to the explanation of variations in Y , Pindyck and Rubinfeld (1998). The test involves estimating the following pair of regressions

The causal relationship between economic growth and financial development indicators is examined with the help of Granger-Causality procedure based on Unrestricted Vector Auto Regression using the error correction term. This procedure is particularly attractive over the standard VAR because it permits temporary causality to emerge from firstly, the sum of the lagged differences of the explanatory differenced variable and secondly, the coefficient of the error-correction term. In addition, the VECM allows causality to emerge even if the coefficients lagged differences of the explanatory variable are not jointly significant, Miller and Russek (1990). It must be pointed out that the standard Granger-causality test omits the additional channel of influence. VAR model is estimated to infer the number of lag terms required (with the help of simulated results using VAR) to obtain the best fitting model and appropriate lag lengths were then used in causality tests yielding

the F-statistics and respective p-values. For any F-statistic, the null hypothesis is rejected when the p-value is significant (less than 0.05 or 5% level of significance or those stated otherwise). A rejection of the null hypothesis would imply that the first series Granger-causes the second series and vice versa. The equations 18 is now transformed to include the error correction term as depicted in the following equations respectively

$$\Delta X_t = \phi_0 + \sum_{i=1}^p \phi_{1,m} \Delta X_{m,t-i} + \sum_{i=1}^q \phi_2 \Delta Y_{t-i} + \psi RES_t + \varepsilon_{1L} \quad (19)$$

Where the error terms is taken from the following cointegrating equation

$$\Delta X_t = \beta_0 + \beta_m (\Delta Y_{m,t}) + \varepsilon_t \quad (20)$$

The independent variables in the equations are first differenced. The null hypothesis ΔY doesn't Granger cause ΔX is rejected if the estimated coefficients $\phi_{1,m}$ as well as the estimated coefficient of error term are jointly significant.

Results and Interpretations

The decisive role of the financial system in mobilizing and allocating the resources for capital formation and economic growth has been well established by many empirical studies, Levine (1997). We attempt to point the desirability of policy measures that promote financial intermediation, in terms of the financial deepening process (FD) *i.e.* the extent to which or the ease at which an asset freely flows illiquid to the liquid form, the capacity of the financial system to generate savings (FS) and finally the ability trigger further financial activity (FA) through capital formation, the extent of intervention of government or monetary authority in adjusting the liquidity (LA) in the economy in order to ensure sustainable and organized economic performance (EG). The variables are expressed in its year to year growth form (where G stands for Growth) to avoid the non-stationary properties in the data.

The first two tables (1 & 2) describe the data in terms of its basic statistical descriptive and bivariate correlations. Since the time-period under consideration is longer with regards the first set of variables, table 1 divides the data period into three

panels; the full period covering 1971-2004, the pre-reform period ranging 1971-1992, and the rest as the later. The Jarque-Bera (J-Bera) normality test rejects the hypothesis that the residuals are normally distributed for the full period. Since the JB test is essentially asymptotic, its values for the pre & post-reform periods are not considered. The non-parametric Kolmogorov-Smirnov Z test is reported to measure the effect of reforms on the data rather than the F test for independent samples as the normality assumption in data is violated.

Table 1: Descriptive statistics for time-series variables

| Variables | EG | | | GFA | | | GFS | | | GFD | | | GLA | | |
|-----------------|----------------|-------|------|----------------|--------|--------|-------------|-------|-------|---------------|-------|-------|----------------|-------|--------|
| | Full | Pre | Post | Full | Pre | Post | Full | Pre | Post | Full | Pre | Post | Full | Pre | Post |
| Mean | 4.92 | 4.29 | 6.10 | 15.08 | 20.07 | 6.33 | 11.71 | 12.72 | 9.94 | 14.47 | 16.48 | 10.94 | 0.06 | 3.59 | -6.12 |
| Median | 5.31 | 4.50 | 5.99 | 7.42 | 13.35 | 1.58 | 11.71 | 11.86 | 9.74 | 12.99 | 14.57 | 10.79 | 0.00 | 0.00 | -5.63 |
| Max | 10.47 | 10.47 | 8.20 | 147.32 | 147.32 | 51.53 | 24.20 | 24.20 | 14.11 | 46.56 | 46.56 | 15.98 | 28.57 | 28.57 | 0.00 |
| Min | -5.20 | -5.20 | 3.98 | -39.67 | -39.67 | -19.05 | 5.49 | 5.49 | 5.80 | 5.92 | 8.49 | 5.92 | -16.67 | 0.00 | -16.67 |
| Std. Dev | 3.02 | 3.48 | 1.37 | 35.97 | 41.95 | 20.84 | 4.35 | 4.86 | 2.56 | 7.47 | 8.52 | 3.00 | 8.36 | 7.51 | 5.93 |
| J-Bera | 13.82 | 2.45 | 0.69 | 31.12 | 8.96 | 1.81 | 7.44 | 1.91 | 0.74 | 140.03 | 44.41 | 0.30 | 19.90 | 30.64 | 0.99 |
| P-Values | 0.00* | 0.29 | 0.71 | 0.00* | 0.01* | 0.40 | 0.02** | 0.38 | 0.69 | 0.00* | 0.00* | 0.86 | 0.00* | 0.00* | 0.61 |
| KS-Z | 1.32 (0.06)*** | | | 1.28 (0.07)*** | | | 0.95 (0.32) | | | 1.32 (0.05)** | | | 1.84 (0.02)*** | | |

Notes: (1) Full, Pre and Post denotes the full period, pre-reform and the post-reform periods respectively. (2) Figures in the parenthesis represent *P*-values. (3) KS-Z statistics denote the test result of Kolmogorov-Smirnov Z test for the respective variable in the post-reform period compared to the former. (4) *, ** & *** denote probabilities of 2-tailed significance asymptotic at 1, 5 & 10 percent levels respectively.

Since the beginning of financial liberalisation in 1992-93, India has made a remarkable turnaround with the real GDP growth marks approx. 2 percent increase compared to the previous periods. Relatively, the growth in the financial activity, financial savings, financial deepening has decreased in the later sub-periods, but the difference is not statistically significant in case of the financial savings proxy. However the turbulence in their growth is much lower in the later period compared to the former, as evident from their standard deviations. Overall, the growth in FS and FA has not been at a speed comparable with that of FD. The growth in bank rate proxied by LA is been emphasized as the potential instrument of monetary policy in India to regulate the cost and availability of refinance and to change the volume of lendable resources of banks and other financial institutions. The growth in LA has significantly strengthened in the post-reform period compared to the former, evident from the change in sign to negative in its mean values in the later periods. The bank rate was changed only 6 times during the first 27 years period until 1997 (continuously reviewed thereafter) and remained static during 1974-80, 1981-90 and

1992-96. During the 1980's, the interest rates on bank deposits and loans were changed without making any change in the bank rate. The circumspection of the RBI to alter liquidity through the liquidity stemmed from its desire not to adversely affect the yields and the market for government securities. One can notice the tendency of the central bank to move away from the “cost effect” to the “availability effect”, and again to the “cost effect” in adjustment of liquidity in the economy as the liquidity adjustment policy tightened from 6% in 1971 to 12% during 1992-97 periods, and reactivated at the levels of average 5.5% in 2004.

Table 2: Spearman's rho correlation matrix amongst variables

| Variables | EG | GFA | GFS | GFD | GLA |
|------------------|-----------|------------|------------|------------|------------|
| EG | 1.00 | -0.15 | -0.69* | -0.69* | -0.27 |
| GFA | -0.15 | 1.00 | 0.01 | 0.14 | 0.40** |
| GFS | -0.69* | 0.01 | 1.00 | 0.77* | 0.28**** |
| GFD | -0.69* | 0.14 | 0.77* | 1.00 | 0.29*** |
| GLA | -0.27 | 0.40** | 0.28**** | 0.29*** | 1.00 |

* & ** denote 2-tailed significance at 1 & 5 percent levels respectively.

The non-parametric correlations are computed for the above data since the normality assumption is violated. The results reveal though the growth in economic performance is negatively related with growth in FS, FD, FA and the LA measure, the later two are not significant. These results follow earlier table reflecting the fact, other than the EG variable no other variable reports a positive development in the post-reform periods compared to the former. The central monetary authority's policy to reduce its intervention in money market by gradually reducing the bank rate over the years is in tune with the government's deliberate efforts to stimulate higher economic growth. This explains the negative sign of the correlation coefficients of EG & GLA. The low correlation between FA & FS, and higher incase of GFS & GFD is as per expectations as they proxy the investment and savings functions respectively. The explanation for the negative signs between EG & FD, and growth in LA with FA calls for further analysis to confirm whether such relation is demonstrated in the short-run and the long-run. Such an assessment follows in three steps.

Firstly, we subject the time series variables to stationarity test for the existence of unit root in the time-series of above variables following ADF and PP specification, for the regression of a non-stationary time series on another non-stationary time series may produce spurious regression estimates. The unit root test presented in

table 3 confirms that no variables in our models demonstrate the presence of any stochastic trends; that is they do not contain a unit root in its original form.

Table 3: Results of the unit root tests

| Model 1 At Levels | ADF t-Statistic | Prob.* | PP t-Statistic | Prob.* |
|---|-----------------|--------|----------------|--------|
| <i>Exogenous: Constant & No Trend</i> | | | | |
| Economic Growth | -6.17 | 0.00* | -5.19 | 0.00* |
| Growth in Financial Activity | -6.26 | 0.00* | -6.35 | 0.00* |
| Growth in Financial Savings | -5.93 | 0.00* | -5.95 | 0.00* |
| Growth in Financial Deepening | -3.66 | 0.00* | -3.70 | 0.00* |
| Growth in Liquidity Adjustment | -3.20 | 0.01* | -3.22 | 0.01* |
| <i>Exogenous: Constant & Linear Trend</i> | | | | |
| Economic Growth | -7.25 | 0.00* | -7.50 | 0.00* |
| Growth in Financial Activity | -6.39 | 0.00* | -6.61 | 0.00* |
| Growth in Financial Savings | -6.76 | 0.00* | -7.19 | 0.00* |
| Growth in Financial Deepening | -4.59 | 0.00* | -4.57 | 0.00* |
| Growth in Liquidity Adjustment | -4.73 | 0.00* | -4.79 | 0.00* |

Notes: (1) ADF and PP are Augmented Dickey Fuller & Philip-Perron test results respectively. (2) Δ denotes first-differences (3) * denote probabilities of 2-tailed significance asymptotic at 1, percent levels.

Secondly, we investigate the cointegrating relationship among variables in a multivariate system to identifying the cointegrating (long-run equilibrium) relationships and gauge the extent of loadings on cointegrating relationship between the underlying variables, estimate a Johansen cointegrating to test the restrictions imposed by cointegration on the unrestricted VAR involving the series equation with a constant and without deterministic trend in the data with a unit lag. Finally we attempt to estimate the nexus between economic performance and financial infrastructure development with a VAR framework.

After confirming the data is stationary, it is possible to carry out the cointegration tests between the different proxies of financial development and the economic growth to test for the existence of a stable relationship between them. The first row in the table 4 test the hypothesis of no cointegration, the second row test the hypothesis of one cointegrating relation, and so on, all against the alternative hypothesis of full rank, i.e. all series in the VAR are stationary. To determine the number of cointegrating relations r , subject to the assumptions made about the trends in the series, we can proceed sequentially from $r = 0$ to $r = k-1$ until we fail to reject. The first row in the upper table tests the hypothesis of no cointegration, the second row tests the hypothesis of one cointegrating relation, the third row tests the hypothesis of two

cointegrating relations, and so on, all against the alternative hypothesis of full rank, i.e. all series in the VAR are stationary. The critical values for the trace statistic reported follow Osterwald-Lenum (1992). The trace statistic does not reject any of the hypotheses at 1 & 5% level and Likelihood ratio test indicates 5 cointegrating equations at 5% significance level.

Table 4: Results of the Johansen cointegration test

| Eigen Value | Likelihood Ratio | 5 % Critical Value | 1 % Critical Value | Hypothesized No. of CE(s) |
|--|------------------|--------------------|--------------------|---------------------------|
| Series: EG, GFA, GFD, GFS & GLA | | | | |
| 0.78 | 136.75 | 68.52 | 76.07 | None * |
| 0.75 | 87.81 | 47.21 | 54.46 | At most 1 * |
| 0.52 | 43.85 | 29.68 | 35.65 | At most 2 * |
| 0.30 | 20.06 | 15.41 | 20.04 | At most 3 * |
| 0.24 | 8.70 | 3.76 | 6.65 | At most 4 * |

* denotes rejection of the hypothesis at 1 % significance level

Econometrically, cointegration means that we have co-evolution of financial infrastructure development and economic indicators in India, which gives in the long run a cointegrating vector or a long run equilibrium state. The results from table 4 suggest that financial infrastructure development and economic performance indicators are integrated and there exists a long-run or equilibrium, relationship between them. Since it is possible that cointegrating variables may deviate from their relationship in the short run, but their association would return in the long run.

In order to check for the long term relationship amongst the dependent and independent variables, we subject the variables to estimation using the specifications stated in equations 10 and 11. The reported values of post-regression statistics are displayed along with the regression coefficients in table 5 illustrating the long run relationship between the regressand with the regressors. Consequently, the short run dynamics of the variables are seen as fluctuations around this equilibrium and the ECM indicates how the system adjusts to converge to its long-run equilibrium state. The speed of adjustment, to the long run path, is indicated by the magnitudes of the coefficients of α vectors (i.e. $\alpha 1$ and $\alpha 2$). The effect of the error correction term βX_{t-1} on economic growth depends, first, on the sign of the adjustment coefficient $\alpha 1$ and second, on the sign of βX_{t-1} itself since βX_{t-1} is a stationary process and may be positive, negative or equal to zero. The values of r square and the significance of the F -statistic model denote that the fitted model explains the data well in the long-run as

well as the short-run. The post-regression diagnostic tests rule out any serious problems in the series, further robust standard errors are used in the regression corrects for bias if any. The estimated coefficients in the models don't deviate much in the short & the long-run. The error correction term however model (ECM) in spirit of Sargan (1984), & Granger (1988) reveals whether the dependent variables adjusts to the explanatory variables in the same period as well as the magnitude of the speed of such adjustment.

Table 5: VECM estimates for the economic growth model

| Coefficients with P- values for Long-Run Cointegration | | | | | |
|--|------------------------------|---------------------|-----------------------|---------------|--------------|
| Dependent Variable | Independent Variables | Coefficients | Robust Std. Er | t-Stat | Prob. |
| EG | <i>Constant</i> | 11.93 | 0.94 | 12.69 | 0.00* |
| | GFA | -0.02 | 0.01 | -2.45 | 0.02** |
| | GFS | -0.61 | 0.10 | -5.88 | 0.00* |
| | GFD | 0.03 | 0.06 | 0.47 | 0.64 |
| | GLA | 0.00 | 0.02 | 0.02 | 0.99 |
| R-squared= 0.68 Durbin-Watson= 1.84 F-statistic= 17.19 (0.00)* Mean VIF, TOL= 1.32, 0.77 ADF test for Residual= -5.46 (0.00)* | | | | | |
| Coefficients with P- values for Short-Run Cointegration | | | | | |
| ΔEG | <i>Constant</i> | 0.08 | 0.31 | 0.26 | 0.79 |
| | ΔGFA | -0.01 | 0.01 | -1.95 | 0.06*** |
| | ΔGFS | -0.57 | 0.06 | -10.31 | 0.00* |
| | ΔGFD | -0.02 | 0.04 | -0.50 | 0.62 |
| | ΔGLA | 0.03 | 0.04 | 0.86 | 0.40 |
| | u_{t-1} | -0.99 | 0.19 | -5.17 | 0.00* |
| R-squared= 0.88 Durbin-Watson= 1.90 F-statistic= 36.74 (0.00)* Mean VIF, TOL= 1.26, 0.80 ADF test for Residual= -5.34 (0.00)* | | | | | |

Note: (a) G denotes Growth and Δ , the first difference operator (b) *, ** & *** denote probabilities of 2-tailed significance asymptotic at 1, 5 & 10 percent levels respectively.

As per expectations and in tandem with the results of the correlation matrix, the dependent variable economic growth bears a significantly inverse relation with the financial activity generating from the private corporate sector and financial savings, an economy is able to generate. The corporate sector in India is a deficit one that borrows funds from other sectors, mainly households, either directly or intermediated through banks or non-bank financial institutions. It then invests over and above internal funds, either in capital formation that takes the form of investments in physical assets, such as land, building, machinery or stocks, or in financial assets such as loans and advances, securities and sundry credit. Plunging gross capital formation by the private sector could be due to non-availability of funds from other

sectors, as these sectors themselves have lucrative investment avenues. The impact of financial savings on economic growth is significantly negative and the largest. Since higher growth entails higher growth in economic activity, more investment opportunities and returns, slack in financial savings is eminent. The magnitude of both these variables is constant both, in the short-run as well as in the long-run. The variable GFD, representing liquid liabilities to GDP has a positive impact on the growth proxy in the long-run while negative in the short-run, though the magnitude is small and insignificant. The positive collaboration of the growth in liquidity adjustment to the extent of 0.03 points with growth in economic activity is tenable only in the short-run and has no effect in the long run. The error correction term describes the speed of adjustment back to equilibrium, and its strict definition is that it measures the proportion of last period's equilibrium error that is corrected for. The error correction term is highly significant and has the expected negative sign. Since u_{t-1} (*i.e.*) economic growth is below its equilibrium value), The sign indicates, that if the difference between the dependent variables and the respective regressors in the model are positive in one year, the growth rates of the dependent variable will fall during the next period to restore equilibrium, and vice versa.

To check the robustness of these results, we check the dynamic interaction between the cointegrated variables in the long run and how each one is causing the other. According to Granger (1988), if two variables are cointegrated, then we wait for Granger causation in at least one direction. The hypothesis test for the dynamic interaction between the cointegrated variables through Unrestricted VAR are presented in table 7 (in Appendix) based on the lag order selection criteria in table 6.

Table 6: Lag length selection criteria

| Lag Level | LL | LR | FPE | AIC | HQIC | SBIC |
|-----------|---------|---------|-----------|---------|----------|--------|
| 0.00 | -660.39 | . | 1.27E+13 | 44.36 | 44.43 | 44.66 |
| 1.00 | -607.64 | 105.50 | 2.05E+12 | 42.51 | 42.96 | 43.91 |
| 2.00 | -561.37 | 92.543* | 5.77e+11* | 41.091* | 41.9128* | 43.59* |

Notes: (1) Results of the Likelihood Ratio (LR), the Final Prediction Error (FPE), the Akaike Information criteria (AIC), the Hannan and Quinn Criteria (HQ), and the Schwarz Bayesian Criteria (SBC). (2)* indicate optimum lag length for the respective criterion column

The results for economic performance and infrastructure development causality are distinct. First, in the short run we find significant support for the hypothesis that growth in financial infrastructure causes growth in economic performance but no

support for the contrary. In the long run, independence or no causality is suggested between the two. That is, there is no evidence that economic growth and growth in financial infrastructure cause and affect each other in the long-run and this may be because the financial sectors in India observed long periods of total public control and full government intervention in the determination and the allocation of financial resources to capital accumulation. Second, the country is reforming gradually its financial sector in terms of improving their institutional and regulatory infrastructure. The transformation process of the intermediaries is far more from complete. As a consequence, the expected positive effects of these financial liberalization policies on long-run economic growth can not be seen before the achievement of full and total liberalization of financial structures and especially the liberalization of capital accounts. Significantly, there exists unidirectional causality between growth in financial deepening and a spurt in economic activity and a unidirectional causality is noticed from growth in economic activity towards growth in financial activity. Bidirectional causality is suggested between growths in financial activity with the growth in financial savings and causes financial deepening. Increase in Liquidity adjustment measures by the central banker results in more financial savings in order to benefit from higher returns due to higher interest rates.

Summary and Policy Implications

The coherent picture which emerges from Johansen cointegration and the ECM tests is that there is evidence in favor of a short run effect of “financial infrastructure led economic growth”. Finance is found to be a leading sector, only, in the short-term link in Granger causality tests with stationary variables. Moreover, Granger-causality test based on vector error correction model (VECM) further reveals that in the long run, stock market development Granger-causes infrastructural growth. Hence, this study provides robust empirical evidence in favor of finance-led growth hypothesis for the Indian economy.

The financial infrastructure development indicators for the overall economy have a highly positive causation coefficient with the economic activity implying that they have developed together. Our findings suggest that the evolution of financial sector tends to, or is more likely to stimulate and promote economic growth when monetary

authorities adopt liberalized investment and openness policies, improve the size of the market in tune with the macroeconomic stability. Development of financial infrastructure can do a good job of delivering essential services and can make a huge difference to a country's economic growth. Ensuring robust financial sector development with the minimum of crises is essential for growth and reducing transaction cost and inefficiencies as has been repeatedly shown by recent research findings.

Government ownership of infrastructure and interference of monetary authorities continues to be remarkably widespread in India, despite clear evidence that the goals of such ownership and interference are rarely achieved, and that it weakens the financial system rather than the contrary. However, the issues of complete autonomy to the supervisory and regulatory agencies, full convertibility on capital account and privatization of banking systems has to be designed carefully if the benefits are to be gained and the risks of an early collapse minimized. Facilitating convertibility and the entry of reputable foreign financial firms to the local financial market should be welcomed as they bring competition, improve efficiency, and lift the quality of the financial infrastructure. As such, they are an important catalyst for the sort of financial development that promotes growth. Capital inflows can also help Indian financial system to securely integrate itself with the world financial system through ownership and portfolio links enabling diversification of risks. Thirdly, regulation and supervision of small domestic systems is disproportionately costly, and even a well-funded effort would be hard pressed to ensure stability if finance is restricted to domestic institutions operating locally. Domestic financial systems fall short of minimum efficient scale and thus have much to gain from outsourcing financial services from abroad. Public effort must be oriented not only toward the promotion of real growth, but also continuing financial liberalization processes. There is a need to support, nurture and decentralize institutional and fiscal infrastructure, relax entry norms relating foreign investments, and amend archaic regulations. Our results point such lacunae inhibits the flowering of the Indian economy's ability to its fullest potential.

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Appendix

Table 7. Granger Causality Wald Test with 2 Lags

| Null Hypothesis | Coefficients with P-values for Short-Run Non-Causality | Coefficients with P-values for Long-Run Non-Causality |
|--|--|---|
| Effect = Economic Growth | | |
| Growth in FA does not Granger Cause EG | 2.61 (0.27) Fail to Reject | 1.86 (0.40) Fail to Reject |
| Growth in FS does not Granger Cause EG | 3.10 (0.21) Fail to Reject | |
| Growth in FD does not Granger Cause EG | 15.05 (0.00)* Reject | |
| Growth in LA does not Granger Cause EG | 2.64 (0.27) Fail to Reject | |
| Financial Infrastructure does not Granger Cause EG | 23.21 (0.01)** Reject | |
| EG does not Granger Cause Financial Infrastructure | | 0.58 (0.74) Fail to Reject |
| Effect = Financial Activity | | |
| EG does not Granger Cause Growth in FA | 5.46 (0.07)*** Reject | 0.55 (0.76) Fail to Reject |
| GFS does not Granger Cause Growth in FA | 5.29 (0.07)*** Reject | |
| GFD does not Granger Cause Growth in FA | 4.82 (0.09)*** Reject | |
| GLA does not Granger Cause Growth in FA | 4.04 (0.13) Fail to Reject | |
| All 4 Variables (Jointly) does not Granger Cause GFA | 42.31 (0.00)* Reject | |
| Effect = Financial Savings | | |
| EG does not Granger Cause Growth in FS | 3.50 (0.17) Fail to Reject | 3.09 (0.21) Fail to Reject |
| GFA does not Granger Cause Growth in FS | 3.81 (0.15)**** Reject | |
| GFD does not Granger Cause Growth in FS | 12.21 (0.00)* Reject | |
| GLA does not Granger Cause Growth in FS | 10.78 (0.00)* Reject | |
| All 4 Variables (Jointly) does not Granger Cause GFS | 36.43 (0.00)* Reject | |
| Effect = Financial Deepening | | |
| EG does not Granger Cause Growth in FD | 0.81 (0.67) Fail to Reject | 2.95 (0.23) Fail to Reject |
| GFA does not Granger Cause Growth in FD | 5.15 (0.08)*** Reject | |
| GFS does not Granger Cause Growth in FD | 0.79 (0.68) Fail to Reject | |
| GLA does not Granger Cause Growth in FD | 0.90 (0.64) Fail to Reject | |
| All 4 Variables (Jointly) does not Granger Cause GFD | 30.64 (0.00)* Reject | |
| Effect = Liquidity Adjustment | | |
| EG does not Granger Cause Growth in LA | 0.23 (0.89) Fail to Reject | 0.39 (0.82) |

| | | |
|--|-----------------------------------|-----------------------|
| GFA does not Granger Cause Growth in LA | 0.54 (0.76) Fail to Reject | Fail to Reject |
| GFS does not Granger Cause Growth in LA | 1.60 (0.45) Fail to Reject | |
| GFD does not Granger Cause Growth in LA | 1.47 (0.48) Fail to Reject | |
| All 4 Variables (Jointly) does not Granger Cause GLA | 8.95 (0.54) Fail to Reject | |

Note: Same as in Table 5.

Portfolio Revision Using Formula Plans

A Study of Dollar Cost Averaging Technique

K. V. Rao and K. Chandan

In this paper, an attempt has been to test the hypothesis that the formula plan would help an investor in planning for his investment. Dollar Cost Average (DCA) is one such technique suggested by user by an investor to make gains in capital market. The fact that the DCA technique enables the investor to acquire share below their average price is tested with help of the data collected for National Stock Exchange, covering 34 shares for 36 months. The result of our analysis confirms the hypothesis that it is possible to acquire share below their market price. The result also shows that 16th and 17th trading of the months are more preferable, other trading days of the month. To test the robustness of technique the same has been compared with Random Investment Technique also.

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Introduction

There are two questions that boggle the mind of an investor, viz., what securities to be bought and when to buy them. The first question is sought to be answered with the help of fundamental analysis. The second question is attempted to be answered by resorting to Technical Analysis. Timing has long been a problem in the investment world. Buying the

securities when the prices are low and selling them when prices are high is all that desired in investment management. Unfortunately, stock prices fluctuate in such a way that induces the investors to react in a way opposite to the one that would enable them to benefit from these fluctuations. The general tendency of the investors is that they are hesitant to buy when prices are low under the fear that prices will fall still lower and won't move upward again; and they are also sticky in selling the securities when the prices are raising. This requires lot of discipline and a different kind of mind set among investors.

To obviate these difficulties and to provide a guide for action, attempt has been made to mechanize the investment process by setting down certain base rules and regulations. Formula plans, referred to in the investment literature, fall under this category. These plans intend to make decisions on timing automatic. They consist of predetermined rules as to when purchases and sales of securities are to be made and also the size of investment desired to be involved in the activity. The formula plans operate under the following premises:

- That stock prices fluctuate up and down in cycles and that these cycles are closely related to movements in the economic activity.
- Those investors cannot forecast the direction of the next fluctuation. If an investor merely buys a stock and remains in different to fluctuate in its price, there is no investment management. Formulae plans are an attempt at exploitations the fluctuations and make them a source of profit to the investor.

Dollar cost averaging is one such formula plan that makes the investor to trade automatically.

Concept of Dollar Cost Averaging

Dollar cost averaging is a frequently used investment strategy. Very simply, it involves making a regular investment at a regular interval. With no guarantee against loss, dollar cost averaging lowers the average cost paid for an investment. Small investors do not

have a large lump sum amount to invest. If investors with modest income invest periodically for a long-term wealth building, DCA brings investments discipline.

Under this technique, an investor invests a constant sum in a specified stock or a portfolio of stocks at periodic intervals; regardless of the price movements of the stocks under consideration. An investor buys more shares when prices are low and fewer numbers of shares when prices are high. Thus, when financial markets are in a slump, more shares can be purchased at a lower price per share. If prices increase sharply with only small declines, average cost may be greater than average price. Dollar cost averaging takes the emotion out of investing. Under this arrangement, an investor will make regular deposits; no matter what is happening in the financial markets.

Dollar cost averaging is also advantageous for another reason. Most people can only invest small amounts as they get paid. Dollar cost averaging can easily be setup through automated mutual fund deposits. Simply list your bank and account number on a fund application and the fund will automatically withdraw the amount of the monthly deposit once an account is established. Dollar averaging plans can vary according to the length of intervals between the investments. The size of the sum invested must be large enough to keep the percentage of commission costs relatively low if possible; and this may require the intervals between investments to be fairly long. Best results can be possible if shorter the interval between two investments. The shorter interval makes it less likely that the investor will miss the opportunity, to purchase stocks at low prices resulting from downward fluctuations.

The capacity of the Dollar cost averaging plan is to achieve a lower average cost per share. As the program continues over long periods of time and the total fund becomes very large, the incremental addition of each new investment at various prices is averaged over many shares and the effect on the average cost per share is greatly diluted. The fact that dollar cost averaging enables investors to acquire the shares below their average price is not as important as the growth of the value of the shares over the long term. Dollar cost averaging programs are generally considered most useful over long terms, such as five to fifteen year periods, enabling stock prices to complete numerous cycles and to achieve the long-term growth that is anticipated. Higher volatility leads to higher profits over entire cycles. Dollar cost averaging is not advocated for use by any one who might need to withdraw funds from the investment program on

short notice; such a situation can lead to losses if the investor has to liquidate the holdings at low prices. If an investor can meet these requirements dollar cost averaging can obtain favorable results.

Review of the Literature

There is a general curiosity as to whether the formula plans really produce any result. Findings of earlier research studies point out to the defined explanation.

Balvers (1990), Fama and French (1992) and Rosenberg (1985) studied the weak and semi-strong forms of the efficient market hypothesis and suggested that there should be a few, if any, investment technique that persist in giving meaningfully superior performance over time. Some techniques have given superior performance such as those investing in low P/E stocks, investing to take advantage of the “size effect” and even investing based on the January and other calendar related effects.

Marshall and Baldwin (1994) did a statistical comparison of Dollar Cost Averaging with random investment technique. They calculated the Internal Rate of Return (IRR) to an investor from each of many simulated investment scenarios under both techniques. They addressed the research question, “Does DCA yield superior investment performance compared to a purely random investment technique? They concluded that the null hypothesis is valid and that the dollar cost averaging is not superior to random investment technique. Marshall (2000) compared many mechanical investment techniques, including dollar cost averaging, and random investment technique to determine if any technique is superior in its performance. Results indicated that value averaging does provide superior expected investment returns when investment prices were quite volatile and over extended investment time horizons with little or no increase in risk.

These results were quite surprising based on research, supporting the efficient market hypothesis and the fact that the actual performance attributed to value averaging does not result from any temporary inefficiency in market prices. It is evident from these studies mentioned above that the US stock data could not uphold the superiority of the formulae

plans. It is thus interesting to examine the utility of these techniques with the Indian stock data.

Methodology

For the purpose the present study, data have been collected from the National stock Exchange pertaining to the shares covered under 'Nifty Group'. The Period and study is three years from Jan 2001 to December 2003, spreading to 36 months. As a matter of fact, nifty index consists of 50 shares. The study could not include all the fifty, since some of the stocks were taken out of the index in the process of revision. Thus, the study included only those stocks that formed part of the index although 36 months of the study period. On this basis, we have got 34 shares only for inclusion in the study. Further, it is assumed that our targeted investor invests a fixed sum of Rs. 20,000 a month. The study tests the following to hypothesis:

- (i) Whether it would be possible for the targeted investor to purchase shares below the average market price.
- (ii) Whether there are any particular trading days in a month that maximize the benefit to the targeted investor.

Analysis and Discussion

As indicated earlier, Dollar cost averaging technique helps the investor to avoid buying securities at high levels. If the technique is executed over a complete cycle of stock prices, the investor will obtain his shares at a lower average cost per share than the average price per share over the same period. This phenomena results from the fact that constant-dollar sum purchases more shares at lower prices. The study extends to 34 shares of the Nifty group of NSE for 36 months from 2001 to 2003. Computations have been made for all the 34 shares for all the trading days in the month. Invariably, the results have shown that the average cost price of the shares is lower than the market price for the period under consideration. The difference between cost price and market price has varied between the lowest of the 0.0011 percent and the highest of 0.7963 percent for

the study. The study has shown that the difference accrued to be significant on the 16th and 17th trading day in case of month (Table 1). It also evident from the results that the highest spread was recorded in case of NIIT on 16th and 17th trading day in case of MTNL.

Table 1: Extent of difference between cost price and market price for acquiring shares on 16th and 17th trading days (in %).

| S.No | Name of the Company | 16 th Trading Day | 17 th Trading Day |
|------|--------------------------|------------------------------|------------------------------|
| 1 | ABB LTD | 0.019922 | 0.019306 |
| 2 | ACC | 0.012998 | 0.012353 |
| 3 | BAJAJ AUTO LTD | 0.056327 | 0.056675 |
| 4 | BHEL | 0.020678 | 0.021988 |
| 5 | BPCL | 0.337259 | 0.337166 |
| 6 | BRITANNIA INDUSTRIES LTD | 0.017878 | 0.013571 |
| 7 | BSES | 0.010611 | 0.008678 |
| 8 | CIPLA LTD | 0.008845 | 0.018412 |
| 9 | COLGATE PALMOLIVE | 0.182458 | 0.007886 |
| 10 | DABUR INDIA | 0.015887 | 0.015031 |
| 11 | DIGITAL EQP | 0.050592 | 0.056554 |
| 12 | DR. REDDY'S LABS | 0.041627 | 0.043002 |
| 13 | GUJARAT AMBUJA CEMENT | 0.182901 | 0.010010 |
| 14 | HCL TECHNOLOGIES LTD | 0.128891 | 0.123130 |
| 15 | HINDALCO | 0.022080 | 0.022301 |
| 16 | INDIAN HOTEL | 0.049044 | 0.045318 |
| 17 | INFOSYS | 0.045858 | 0.042420 |
| 18 | IPCL | 0.097145 | 0.096975 |
| 19 | ITC LTD | 0.010360 | 0.010397 |
| 20 | M&M | 0.078603 | 0.075333 |
| 21 | MTNL | 0.017687 | 0.796344 |
| 22 | RANBAXY | 0.037464 | 0.034995 |
| 23 | NATIONAL ALUMINIUM | 0.076080 | 0.059235 |
| 24 | NESTLE | 0.141240 | 0.001168 |
| 25 | NIIT | 0.358703 | 0.359380 |
| 26 | SATYAM COMPUTERS | 0.078152 | 0.070536 |
| 27 | SCF INDIA | 0.142287 | 0.149342 |
| 28 | SMITHKLINE CONSUMER | 0.016070 | 0.084084 |
| 29 | SUN PHARMA | 0.022312 | 0.022414 |
| 30 | TATA CHEMICALS | 0.033540 | 0.055494 |
| 31 | TATA POWER | 0.020349 | 0.014820 |
| 32 | TATA TEA | 0.030950 | 0.053282 |
| 33 | WIPRO | 0.062367 | 0.060576 |
| 34 | ZEE TELE | 0.091573 | 0.093768 |

The study has also brought out the fact that 16th and 17th trading days are the most preferred days for investment by the targetted investor. A majority of the companies have figured on the list on these two trading days. Further, an attempt has been made to arrive at (in absolute terms) the difference between cost price and market price for all the

trading days for all the companies. For calculating the difference, it is assumed that the targeted investor borrows the money at the rate of 8 percent; compounded quarterly. Results pertaining to the highest difference have been tabulated and the same show that the difference amount has been varying from Rs 13,13,666 to Rs 26,569 (Table 2). Even if other trading days are considered, the difference amount has been positive in a majority of the cases and in about 83.56 percent of the cases, the average cost price is lower than the average market price. The results also prove our earlier hypothesis that 16th and 17th tradings are more preferable to other trading days, since the difference amount has been large in a majority of the companies.

Table 2: Probable realizations to the targeted investor

| S.No | Name of the Company | Difference Amount (Rs) | Trading Day |
|------|--------------------------|------------------------|------------------|
| 1 | SCF INDIA | 1313666 | 5 th |
| 2 | BAJAJ AUTO LTD | 1252292 | 17 th |
| 3 | TATA CHEMICALS | 1244496 | 16 th |
| 4 | BHEL | 1074408 | 16 th |
| 5 | IPCL | 888618 | 8 th |
| 6 | M&M | 848565 | 17 th |
| 7 | ABB LTD | 833017 | 16 th |
| 8 | TATA POWER | 832409 | 16 th |
| 9 | INDIAN HOTEL | 831365 | 17 th |
| 10 | BSES | 735124 | 16 th |
| 11 | MTNL | 692301 | 3 rd |
| 12 | HINDALCO | 644216 | 12 th |
| 13 | NATIONAL ALUMINUM | 626774 | 11 th |
| 14 | SATYAM COMPUTERS | 554569 | 16 th |
| 15 | TATA TEA | 450233 | 17 th |
| 16 | ACC | 430546 | 11 th |
| 17 | BPCL | 411792 | 14 th |
| 18 | DABUR INDIA | 392000 | 16 th |
| 19 | SUN PHARMA | 371119 | 13 th |
| 20 | ITC LTD | 364538 | 8 th |
| 21 | RANBAXY | 340588 | 4 th |
| 22 | GUJART AMBUJA CEMENT | 317702 | 10 th |
| 23 | DIGITAL EQP | 308636 | 8 th |
| 24 | HCL TECHNOLOGIES LTD | 302749 | 4 th |
| 25 | WIPRO | 286178 | 14 th |
| 26 | DR. REDDY'S LABS | 275125 | 10 th |
| 27 | CIPLA LTD | 272093 | 1 st |
| 28 | ZEE TELE | 224630 | 17 th |
| 29 | INFOSYS | 219374 | 17 th |
| 30 | NIIT | 154525 | 17 th |
| 31 | NESTLE | 96129 | 10 th |
| 32 | COLGATE PALMOLIVE | 85468 | 17 th |
| 33 | BRITANNIA INDUSTRIES LTD | 62936 | 2 th |
| 34 | SMITHKLINE CONSUMER | 26569 | 11 th |

Conclusion

The fact that the DCA technique enables the investor to acquire shares below their average market price is tested with help of the data collected from National Stock Exchange, covering 34 shares for 36 months. The results of our analysis confirm the hypothesis that it is possible to acquire shares below their market price. The results also shows that 16th and 17th trading days are more preferable to other trading days of the month.

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Effect of Option Trading in Indian Cash Market: Further Evidence from Non-price Variables

By applying the open interest and volume based predictors, this study re-investigates the impact of two option market non-price variables in predicting the future price movements in underlying cash market over a period of time. Though being insignificant just after its initiation, the open interest based predictors are found to be statistically significant, even more than the volume based predictors, in the later periods. The most interesting finding is that, hedging, the basic purpose of introducing such instrument has been shifted towards speculation or more generally as a simple investment strategy in the subsequent periods. It has also been found that the option expiration effect would not arise exactly on the expiration date, but starts at least from the previous five days up to the date of expiration.

Introduction

An option, being a contract between two parties giving the taker (buyer) the right, but not the obligation, to buy or sell an underlying asset at a predetermined price on or before a predetermined date, is one of the important hedging instrument traded in derivative exchanges all over the world. It is well known that trading in options (Black, 1975) may be more attractive than the trading in underlying equity market due to the economic incentives provided by reducing transaction cost, capital requirements and trading restrictions, commonly seeing in the equity market. The attractiveness of option market can be proved if we look into the increasing trend in the total traded value in the option market over a period of time in a developing economy like India. Options can be used both for hedging as well as

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for speculation. If the assumptions (Cao, 1999) relating to complete, competitive and frictionless markets are relaxed, then the introduction of option contracts can effect the prices of underlying assets. It is well documented that not only the option prices, but also the non-

price variables, such as open interest, trading volume etc., from the option market can also affect the future prices in the underlying cash market.

At a preliminary stage (Mukherjee and Mishra, 2006), an attempt was made to investigate the impact of such non-price (i.e. other than asset price) variables viz. open interest and trading volume from option market in predicting the price index viz. Nifty index in underlying cash market in India during two sub periods consisting of 6 months duration for each period. Since it was a primary attempt and also covered a very short span of time, a further attempt has been made to trace out the impact of those non-price variables from the index option market on the underlying prices of cash market, here on CNX Nifty index. Here we have divided our overall sample period into three different annual periods, starting from June 2001 when index options was first introduced in Indian market. Measuring the impact in three different periods can capture the gradual effect of the non-price variables on the underlying market over a period of time. By applying the method of open interest and volume based predictors for both call and put options (Bhuyan and Yan, 2002), it has been tried to empirically re-examined the hypothesis that the above non-price variables in the option market can not be used to predict the future price index in underlying cash market. Our study is based on daily data for both price as well as non-price variables over three different annual sub periods. This study reveals the fact that neither of the non-price variables are found to be significant in predicting the underlying spot price index during the first annual period, i.e., just after the initiation of option trading. But as time passes on, both open interest and trading volume from the option market are found to be efficient in predicting the future prices in the underlying cash market. Though, the open interest has been found to be more significant as compared to the other non-price variable.

The remainder of this paper is organized as follows. Section 2 discusses a brief review of the past literature relevant with this study and pointed out the efforts trying to achieve through this study. A brief description of the method and the tests applied in the study along with the data used are presented in section 3. Section 4 deals with the empirical findings derived from this study. Lastly, section 5 concludes.

Review of Literature

There is a diverse amount of literature focused on the interrelationship between the derivative market viz. option market, and the underlying cash market. Different issues addressed in those studies include examining – (i) the effect of option listing on the volatility,

bid-ask spread and liquidity of underlying cash market; (ii) the option expiration effect on the prices of underlying cash market at maturity; (iii) the lead-lag relationship among the price as well as non-price variables from both option and underlying cash market; (iv) the role of option market in discovering the price in underlying cash market etc. A brief review of some of the past literature, relevant with this study, is presented below.

Skinner (1989), Damodaran (1991), Kumar (1995), Kumar (1998), Bollen (1998), Cao (1999), Trillo (1999), Shenbagaraman (2002), Thomas & Thenmozhi (2003), Joshi (2003) etc. have tried to examine the option listing effect on the volatility, liquidity etc. of underlying cash market all over the world. Studies by Klemkoski (1978), Officer (1981), Bollen (1999) etc. have documented the option expiration effect on the prices of underlying cash market at the time of maturity. The lead-lag relationship among the price as well as non-price variables from both option and underlying cash market is reported by Rendlemen (1982), Anthony (1988), Vijh (1988), Whaley (1990), Chan (1993), De. Jong (1998). Since the focus of our interest, specifically in this study, is simply to examine whether the open interest and trading volume from option market are significant in explaining the future movement of prices in underlying cash market, therefore we could not explain the studies mentioned above which covers all the aspects of the interrelationship among the option and cash market other than the current theme of our interest.

The impact of open interest and / or trading volume from option market in discovering the prices in underlying cash market is studied by Blume (1994), Easley (1998), Bhuyan (2001), Bhuyan (2002), Srivastava (2003), Mukherjee (2006) etc. Blume (1994) concludes that the trading volume in the option market provides information about the quality of trader's information that can not be discovered from the price variables. They have supported the fact that the price and volume information are complementary to each other so that a trader ignoring the volume would be penalised because any private information is impounded in the prices while, the trading volume captures the quality of trader's information. So, their findings suggest that both price and volume information are essential to discover the future prices. By using the causality test, Granger (1969), Granger and Newbold (1977), Easley et al. (1998) have tried to investigate the relationship between trading volume in option market and stock price change in underlying cash market. They concluded that the stock prices lead option volumes and option volumes lead stock price changes. Bhuyan and Chaudhury (2001) have investigated the role of open interest from option market in discovering the future price movement in the underlying cash market. They suggested that the trading strategy based on this predictor (open interest based Predictor) yield better results than the buy and hold

strategy. Apart from this, Bhuyan and Yan (2002) in their another study have tried to examine the relative importance of open interest and trading volume from both call and put stock option market in predicting the future stock prices. They concluded that the price predictors developed from the open interest and trading volume in the stock option market can significantly predict the future stock price in the underlying cash market. In order to find out the impact of open interest and trading volume from stock option market on the stock price in India, Srivastava (2003) has used the same predictors as suggested by Bhuyan and Yan(2002) and finally concluded that the open interest based predictors are comparatively more significant than the volume based predictors. Mukherjee (2006) have found that unlike the open interest in the index option market in India, though being insignificant after the initiation of option trading, the trading volume in the Indian option market have also been found to be significant in explaining the future prices in the underlying cash market.

As we see from the literature that there are few studies examining the impact of price as well as non-price variables from the option market in predicting the future price movement in underlying cash market especially relating to those countries where the option market is well established. But, as far as the Indian derivative market is concerned, the index option in this market was introduced during June 2001. Therefore, it has not yet been well documented whether the non-price variables from the option market are that much significant (as reported in the literature) in the Indian scenario. Though there is a very few studies in the same area in India, they mainly suffers from the limited sample period within which it is very difficult to make a strong generalization. Our study contributes to the existing body of literature by examining the impact of those non-price variables during three annual sub periods, starting from the initiation of the instrument (index option) to the recent period. Estimation of such relationship during three different periods can ensure how the impact of the option market on the underlying cash market changes over a period of time.

Methodology

The interrelationship between the net open interest and trading volume in option market and the prices in underlying cash market can be measured by various techniques such as, Granger's Causality test etc. But, in the present study, a simple methodology used by Bhuyan and Choudhury (2001), Bhuyan and Yan (2002) and in India by Srivastava (2003) have been taken into consideration to investigate the significance of net open interest and trading volume from index option market in explaining the price index in underlying cash

market. The terms and notations applied in the methodology are quite same as used in the above mentioned studies.

Let ‘T’ be the time of maturity of a set of call and put option. The current price of cash index is assumed to be I_t ; while, X_i^C and X_j^P are assumed to be the set of strike prices for call and put options, where $i = 1, 2, \dots, k$; $j = 1, 2, \dots, m$. Let O_{it}^C and O_{jt}^P be the net open interest at the current time ‘t’ for a call and put option with the strike price X_i^C and X_j^P respectively. Similarly, V_{it}^C and V_{jt}^P are assumed to be the trading volume for a call and put option at time t with the strike price X_i^C and X_j^P respectively.

Now the two predictors, open interest based predictor and volume based predictor, proposed to be used in predicting the price of underlying cash index, can be defined by using the above variables. The call option open interest based predictor (COP) can be defined as:

$$O_t^C = \sum_{i=1}^k W_{it}^C X_i^C \quad (1)$$

In the above two equations, O_t^C represents the call option open interest based predictor at time t; while k denotes the number of different types of call options showing some non-zero open interests. W_{it}^C is the weight of call options with strike price of X_i^C .

The above concept can also be applied to calculate the put option open interest based predictor (POP), such that:

$$O_t^P = \sum_{j=1}^m W_{jt}^P X_j^P \quad (2)$$

O_t^P is the put option open interest based predictor at time t; m represents the number of different types of put options having some non-zero open interests. Again, W_{jt}^P denotes the weight of put options with strike price X_j^P .

Similarly, the volume based predictor for both call and put options can be calculated by using the trading volume data in option market, i.e., V_{it}^C and V_{jt}^P corresponding to the strike price X_i^C and X_j^P respectively, such that:

$$V_t^C = \sum_{i=1}^k q_{it}^C X_i^C \quad (3)$$

$$V_t^P = \sum_{j=1}^m q_{jt}^P X_j^P \quad (4)$$

V_t^C from equation (3) and V_t^P from equation (4) represent the call option and put option volume based predictor respectively at time t; while, q_{it}^C is the weight of call option with exercise price X_i^C and q_{jt}^P is the weight of put option with exercise price X_j^P . k and m bear the same meaning, but for some non-zero trading volume in option market.

Now, based on the above mentioned predictors, namely call and put option open interest based predictor along with call and put option volume based predictor, it is easy to find out the relative significance of each of these variables by using a multiple regression model such that:

$$\ln I_T = \alpha_0 + \alpha_1 \ln(T-t) + \alpha_2 \ln I_t + \alpha_3 \ln O_t^C + \alpha_4 \ln O_t^P + \alpha_5 \ln V_t^C + \alpha_6 \ln V_t^P + \varepsilon_t \quad (5)$$

where, I_T and I_t are the stock price at the date of maturity and at the current date respectively. (T-t) represents the actual time to maturity; O_t^C and O_t^P are open interest based predictors for call and put options; while, V_t^C and V_t^P are volume based predictors. ε_t is the error term assumed to be white noise. The natural logarithms of the entire variable have been used to account for the heteroscedasticity, i.e. unequal variance among the variables. It is to be noted here that since the variable (T-t) is unable to improve the overall explanatory power (as shown by adjusted R square) and thus reduce the joint significance (represented by F – test), we have removed the variable from the above equation. The reduced form of the equation is such that:

$$\ln I_T = \alpha_0 + \alpha_1 \ln I_t + \alpha_2 \ln O_t^C + \alpha_3 \ln O_t^P + \alpha_4 \ln V_t^C + \alpha_5 \ln V_t^P + \varepsilon_t \quad (6)$$

Now, in order to find out the relative significance of open interest based predictors and volume based predictors separately in the matter of price prediction in underlying cash market, the following regression equations have been used:

$$\ln I_T = \alpha_0 + \alpha_1 \ln I_t + \alpha_2 \ln O_t^C + \alpha_3 \ln O_t^P + \varepsilon_t \quad (7)$$

$$\ln I_T = \alpha_0 + \alpha_1 \ln I_t + \alpha_2 \ln V_t^C + \alpha_3 \ln V_t^P + \varepsilon_t \quad (8)$$

All the above regression equations (Equation 6, 7, and 8) have been solved for three different annual sub periods. Now, in order to remove the influence of expiration of option contracts at maturity in the underlying cash price, we have categorized our estimation into three parts: (i) by including the date of expiration, (ii) by excluding only the expiration date, and (iii) by excluding five days up to the date of expiration.

Data

The National Stock Exchange (NSE) India has commenced trading in S&P CNX NIFTY INDEX Options from June 4, 2001. Our study covers three different annual sub periods: June 2001 to May 2002, August 2003 to July 2004, and January 2005 to December 2005. Daily data relating to the price as well as non-price variables such as spot price index, here CNX Nifty index, in underlying cash market, and open interest, trading volume, different strike prices etc. in index option market, have been collected for all the sub periods. As we know that there are three types of option contracts available in Indian market which gets matured in 1 month called as near month, 2 months and 3 months. Since the option price on the nearest month contract is characterized by a high level of activity and liquidity, all the data for both price and non-price variables of index option on the nearest contract are taken into account. All the relevant data have been collected from the NSE web site (www.nseindia.com) and all the calculations have been made by using MS – Excel and EViews (Version 4.0).

Empirical Results

The hypothesis that the non-price variables viz. open interest and trading volume in option market do not have any significant explanatory power in predicting the future price of the underlying cash index is tested through the multiple regression equations (Equation 6 to 8). Though the price index (I_T and I_t) in underlying cash market both at the time of maturity of option contract (i.e. at the time T) and at the current time (i.e. at time t) can be directly observable, the value of the other independent variables, i.e. the open interest based and volume based predictors for both call and put options (O_t^C , O_t^P , V_t^C and V_t^P) have been calculated in that specific way mentioned in section 3, as suggested by Bhuyan and Yan (2002).

The whole empirical findings have been broadly categorized into two parts. The first category includes all the results derived from the regression (Eq. 6) where both open interest based predictor and volume based predictor for both call and put options are jointly taken into consideration to assess their relative significance in predicting the future price index in underlying cash market. Those results are reported in Table 1 to 3 depending on the consideration of the expiration day. While, the result in the second category is derived from

the regression equation (Equation 7 and 8), where both open interest and volume based predictors for both call and put options are considered separately (through different equations) with a view to have an insight about their individual significance in the matter of price discovery in the underlying cash market. The tables related to the later results are not reported here, but will be available on request.

Table 1 deal with all the results where the expiration days are not taken into consideration separately and the data set includes the date of expiration. At the same time, Table 2 reports the results based on the data set where any data relating to the expiration days only are removed. Lastly, results derived from the data set, excluding any data for the last five days up to the date of option expiration, have been reported in Table 3. Again, the results in all the tables (Table 1 to 3) are divided into three panels. The first panel (Panel A) in each of the table reports the results for the first annual sub period, i.e. from June 2001 to May 2002. While, the results for the second sub period, i.e. from August 2003 to July 2004, are reported in the second panel (i.e. Panel B) and Panel C contains the same results but for the third and recent sub period, i.e. from January to December 2005.

Panel A of Table 1 shows that other than the current cash price, no other variables, neither open interest nor trading volume from the option market are found to be significant in explaining the future price of underlying cash market. Since the time period considered here was just after the initiation of option trading, therefore the non price variables might not found to be statistically significant in explaining the future movement of the underlying cash price. Regardless of their individual significance, the value of adjusted R-square is quite high and the F value is also significant at any level. Though being insignificant during the first period, a drastic change has been found (as reported in the other panels of Table 1) in the results, showing that the open interest and trading volume for both call and put options are found to be statistically significant in the later sub periods. The interesting thing is that the open interest based predictors are found to be more significant than the volume based predictors. It is to be noted here that though being insignificant at any level of significance, the results of open interest based predictors during the first sub period are quite expectable as reported in the earlier studies (Bhuyan & Yan, 2002), i.e., positive coefficient of COP and negative coefficient of POP. As far as the expected sign of the right hand side variables is concerned, Bhuyan and Yan (2002) have argued that investors, expecting the prices of underlying cash index to increase, would prefer to buy call options at higher strike price, i.e. a positive relationship among I_T and O_t^C ; while, if there is any possibility for a decline in the

prices of underlying cash index, then the investors would prefer to buy put options, i.e. a negative relationship among I_T and O_t^P . Srivastava (2003) have also found some mixed results for different stocks listed in Indian stock market. But as far as our results during the later two periods are concerned, we have got a completely different story. Though being significant during both the sub periods, the value of the COP and POP are found to be negative and positive respectively, just reverse to what has been found in the previous studies. The possible explanation behind the positive COP and negative POP as found in the earlier studies is that, in the presence of high degree of volatility, the informed investors are expected only to go for long position either on call or put options. In other words, they believed that in a highly volatile market like India, though it may not be ruled out the possibility of writing of options (Call or Put) by the informed investors, the probability for the informed investors to write options rather than to buy options would be much less. Therefore, the Call option Open interest based Predictors (COP) and the Put option Open interest based Predictors (POP) are expected to have positive and negative coefficient respectively. But there is also a strong explanation behind the results whatever we have got in this study. In the earlier studies, the possibility of writing options has been ignored stating that the informed investors would always prefer to go for the long positions, i.e. buying call options and selling put options, to minimize their risk exposure. But at the same time, it can not be denied that though the main purpose of introducing derivative products in a growing capital market like in India is to hedge the increasing risk of the investors, the same instruments are also used by the speculators who would like to prefer the high risk exposure in order to gain the benefits of a high option premium. In such cases, the results would be completely different like whatever we have got here. When the future prices in the underlying cash market is expected to decline, the informed investors would like to write call options and they would prefer to write put option when the same price is expected to go up in the future. Therefore, the most interesting finding in this study is that, though the basic purpose of introducing derivative instruments such as options in Indian capital market is to hedge the increasing risk of the investors (as found in the results reported in the first panel of all the tables, i.e. just after the initiation of options in Indian market), the hedging purpose, up to a larger extent, has been turned out to speculation in the later sub periods (as reported in the last two panels of all the tables) with the hope of achieving abnormal gain by taking an exposure to the risks. Therefore, based on the above findings, it can be said that the speculators are playing a major role in Indian capital market for its boom.

The above explanation is all about the importance of the open interest from the option market on the future prices in the underlying cash market. But, if we look into the results of volume based predictors, i.e. Call option Volume based Predictors (CVP) and Put option Volume based Predictors (PVP), then it can be seen that these predictors are comparatively less important in explaining the future price movements in the underlying cash market. Though being insignificant just after the initiation of option trading (as reported in Panel A of Table 1), the trading volume for call options is found to be significant at 90% confidence level in the later sub periods. At the same time, though the trading volume for the put options are found to be significant during the second sub period, it turned out to be insignificant in the recent period, indicating that the trading volumes from the option market are becoming less important in predicting the future price movements.

As far as the individual results for the open interest based and trading volume based predictors are concerned (not reported in this study), we have found that the results are almost same as we have found in the joint results, especially for the open interest based predictors during the later two periods. But though the trading volume for both call and put options are reported to be significant at any conventional level during the first two periods, only trading volume for the call option have been found to be significant during the recent period when open interest is excluded. This finding also supports the fact that the trading volume figures are found to be less important in the recent periods. Overall it can be said that not only the individual significance (through the t-values) of almost all the variables, but also the overall explanatory power (through the *AdjustedR*²) of all the models (as in Equation 6 to 8) are almost same with a very marginal decrease in the value of the *AdjustedR*² in case of the models where any of the parameter (open interest or trading volume) is excluded.

As we have said earlier that apart from examining the relationship in three different periods, we have also consider three different cases relating to the expiration days. If we compare the results reported in all the tables, then it can be seen that the results for the open interest based predictors in all the corresponding panels (i.e. Panel A of all the tables, Panel B of all the tables and Panel C of all the tables) are almost identical. This suggests that the expiration of options contract does not have any special impact on the future price of the underlying cash market. In short, there is no options expiration day effect in Indian market. At the same time, as far as the volume based predictors are concerned, the results are also almost same except a little difference during the second sub period when calculations have been made by excluding five days up to the date of expiration (as reported in Panel B of

Table 3). Here, none of the volume based predictors are found to be significant in explaining the future movements of the underlying cash price. Apart from these, if we look into the overall test of significance of all the price and non-price variables (as reported by the F statistics in all the panels of all the tables), it can be observed that the F values are quite less in numbers when the study is based on a data set that excludes data relating to five days up to the date of expiration (as reported in Table 3). Therefore, the options expirations are assumed to have some impact when the period considered for the expiration is little longer, at least five days up to the exact date of expiration. In other words, if there is any option expiration effect at all in Indian market, it would not arise exactly on the date of expiration, but starts at least from the previous five days up to the expiration date.

Conclusion

By applying daily data on both price as well as non-price variables from the equity and option market, an effort has been made to examine the significance of open interest and trading volume from index option market in explaining the future price movement in the underlying cash market in India. The study uses the same methods as developed by Bhuyan and Yan (2002) and recently applied by Srivastava (2003) in the Indian context. Unlike the results derived from the existing studies, especially done in India, our results draw some different conclusion. In the earlier studies, the possibility of writing options has been ignored stating that the informed investors would always prefer to go for the long positions, i.e. buying call options and selling put options. Since our results are little different, it would be feasible to give the explanation in those investors' point of view who would like to go for the short position in the option market. Our results suggest that the informed investors would like to write call options when the future prices in the underlying cash market is expected to decline and they would prefer to write put option when the same price is expected to go up in the future. The most interesting finding in this study is that, though the basic purpose of introducing derivative instruments such as options in Indian capital market is to hedge the increasing risk of the investors, the hedging purpose has been turned out to speculation in the later sub periods. Such results can not said to be unexpected because now a days there are also a large number of investors who are ready to take a high risk with the hope of achieving an abnormal gain from the high option premium. The results also suggest that though being insignificant during the first annual sub period, i.e. just after the initiation of option trading, the open interest based predictors are found to be significant, even more than the volume

based predictors, for both call and put options in the later periods in Indian market. A comparison among the results reported in the first three tables with that of the last three (not reported here) reveals that there is not much difference in the findings derived by excluding any of the parameters (Open interest or Trading volume). This suggests that the parameters have the same explanatory power regardless of the fact whether some other parameters are also present or not. Now, as far as the expiration day effects is concerned, it has been found that the option expiration effect would not arise exactly on the expiration date, but starts at least from the previous five days up to the date of expiration.

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Table 1: Regression results on two predictors ignoring the expiration day.

| Panel A: 1st Sub Period (June 2001 to May 2002) | | | | |
|---|-------------|-----------|--------------|-------------|
| $\ln I_T = \alpha_0 + \alpha_1 \ln I_t + \alpha_2 \ln O_t^C + \alpha_3 \ln O_t^P + \alpha_4 \ln V_t^C + \alpha_5 \ln V_t^P + \varepsilon_t$ $R_{Adjusted}^2 = 0.6160, F = 76.705$ | | | | |
| Variable | Coefficient | Value | t-statistics | Probability |
| <i>Intercept</i> | α_0 | 2.761*** | 10.287 | 0.000 |
| S_t | α_1 | 0.962*** | 8.254 | 0.000 |
| O_t^C | α_2 | 0.142 | 0.592 | 0.555 |
| O_t^P | α_3 | -0.351 | -1.262 | 0.208 |
| V_t^C | α_4 | -0.094 | -0.720 | 0.472 |
| V_t^P | α_5 | -0.057 | -0.368 | 0.714 |
| Panel B: 2nd Sub Period (August 2003 to July 2004) | | | | |
| $R_{Adjusted}^2 = 0.8683, F = 317.5167$ | | | | |
| Variable | Coefficient | Value | t-statistics | Probability |
| <i>Intercept</i> | α_0 | 1.902*** | 14.917 | 0.000 |
| S_t | α_1 | 0.612*** | 5.000 | 0.000 |
| O_t^C | α_2 | -0.926*** | -5.240 | 0.000 |
| O_t^P | α_3 | 1.093*** | 4.648 | 0.000 |
| V_t^C | α_4 | -0.570* | -1.946 | 0.053 |
| V_t^P | α_5 | 0.539** | 2.153 | 0.032 |
| Panel C: 3rd Sub Period (January 2005 to December 2005) | | | | |
| $R_{Adjusted}^2 = 0.8940, F = 328.8897$ | | | | |
| Variable | Coefficient | Value | t-statistics | Probability |
| <i>Intercept</i> | α_0 | -0.473* | -1.887 | 0.061 |
| S_t | α_1 | 1.370*** | 5.061 | 0.000 |
| O_t^C | α_2 | -1.183** | -2.502 | 0.013 |
| O_t^P | α_3 | 1.240** | 2.358 | 0.019 |
| V_t^C | α_4 | -0.679* | -1.737 | 0.084 |
| V_t^P | α_5 | 0.317 | 0.764 | 0.446 |

Note: This table reports the impact of open interest based and volume based predictors from index option market, taken together, on the underlying equity prices when the sample period is included of the expiration days.

*** Significant at 1%, ** Significant at 5%, * Significant at 10%

Table 2: Regression results on two predictors excluding the expiration day.

| Panel A: 1st sub period (June 2001 to May 2002) | | | | |
|--|-------------|-----------|--------------|-------------|
| $\ln I_T = \alpha_0 + \alpha_1 \ln I_t + \alpha_2 \ln O_t^C + \alpha_3 \ln O_t^P + \alpha_4 \ln V_t^C + \alpha_5 \ln V_t^P + \varepsilon_t$ $R_{Adjusted}^2 = 0.6026, F = 68.9294$ | | | | |
| Variable | Coefficient | Value | t-statistics | Probability |
| <i>Intercept</i> | α_0 | 2.898*** | 10.365 | 0.000 |
| S_t | α_1 | 0.952*** | 7.765 | 0.000 |
| O_t^C | α_2 | 0.138 | 0.545 | 0.586 |
| O_t^P | α_3 | -0.374 | -1.293 | 0.197 |
| V_t^C | α_4 | -0.073 | -0.468 | 0.640 |
| V_t^P | α_5 | -0.062 | -0.342 | 0.733 |
| Panel B: 2nd sub period (August 2003 to July 2004) | | | | |
| $R_{Adjusted}^2 = 0.8670, F = 290.6794$ | | | | |
| Variable | Coefficient | Value | t-statistics | Probability |
| <i>Intercept</i> | α_0 | 1.957*** | 15.138 | 0.000 |
| S_t | α_1 | 0.608*** | 4.901 | 0.000 |
| O_t^C | α_2 | -0.903*** | -4.765 | 0.000 |
| O_t^P | α_3 | 1.048*** | 4.208 | 0.000 |
| V_t^C | α_4 | -0.599* | -1.845 | 0.066 |
| V_t^P | α_5 | 0.586** | 2.134 | 0.034 |
| Panel C: 3rd sub period (January 2005 to December 2005) | | | | |
| $R_{Adjusted}^2 = 0.8918, F = 309.9352$ | | | | |
| Variable | Coefficient | Value | t-statistics | Probability |
| <i>Intercept</i> | α_0 | -0.465* | -1.781 | 0.077 |
| S_t | α_1 | 1.376*** | 4.954 | 0.000 |
| O_t^C | α_2 | -1.209** | -2.464 | 0.015 |
| O_t^P | α_3 | 1.245** | 2.272 | 0.024 |
| V_t^C | α_4 | -0.732* | -1.744 | 0.083 |
| V_t^P | α_5 | 0.384 | 0.877 | 0.382 |

Note: This table reports the impact of open interest based and volume based predictors, taken together, on the underlying equity prices when the sample period is excluded only of the expiration days.

*** Significant at 1%, ** Significant at 5%, * Significant at 10%

Table 3: Results on two predictors excluding five days up to the expiration day.

| Panel A: 1st sub period (June 2001 to May 2002) | | | | |
|--|-------------|-----------|--------------|-------------|
| $\ln I_T = \alpha_0 + \alpha_1 \ln I_t + \alpha_2 \ln O_t^C + \alpha_3 \ln O_t^P + \alpha_4 \ln V_t^C + \alpha_5 \ln V_t^P + \varepsilon_t$ $R_{Adjusted}^2 = 0.5282, F = 40.4047$ | | | | |
| Variable | Coefficient | Value | t-statistics | Probability |
| <i>Intercept</i> | α_0 | 3.406*** | 10.313 | 0.000 |
| S_t | α_1 | 1.033*** | 7.342 | 0.000 |
| O_t^C | α_2 | 0.048 | 0.158 | 0.875 |
| O_t^P | α_3 | -0.421 | -1.292 | 0.198 |
| V_t^C | α_4 | 0.075 | 0.329 | 0.743 |
| V_t^P | α_5 | -0.228 | -0.973 | 0.332 |
| Panel B: 2nd sub period (August 2003 to July 2004) | | | | |
| $R_{Adjusted}^2 = 0.8386, F = 188.0634$ | | | | |
| Variable | Coefficient | Value | t-statistics | Probability |
| <i>Intercept</i> | α_0 | 2.129*** | 14.300 | 0.000 |
| S_t | α_1 | 0.586*** | 3.957 | 0.000 |
| O_t^C | α_2 | -0.878*** | -3.119 | 0.002 |
| O_t^P | α_3 | 0.955*** | 2.702 | 0.008 |
| V_t^C | α_4 | -0.591 | -1.194 | 0.234 |
| V_t^P | α_5 | 0.645 | 1.603 | 0.111 |
| Panel C: 3rd sub period (January 2005 to December 2005) | | | | |
| $R_{Adjusted}^2 = 0.8729, F = 206.9584$ | | | | |
| Variable | Coefficient | Value | t-statistics | Probability |
| <i>Intercept</i> | α_0 | -0.720** | -2.375 | 0.019 |
| S_t | α_1 | 1.501*** | 4.323 | 0.000 |
| O_t^C | α_2 | -1.346** | -2.214 | 0.028 |
| O_t^P | α_3 | 1.499** | 2.254 | 0.026 |
| V_t^C | α_4 | -0.980* | -1.853 | 0.066 |
| V_t^P | α_5 | 0.424 | 0.777 | 0.439 |

Note: This table reports the impact of open interest based and volume based predictors, taken together, on the underlying equity prices when the sample period is excluded of five days up to the expiration day.

*** Significant at 1%, ** Significant at 5%, * Significant at 10%

An Empirical Model for Analysing Consumers Attitude / Perception on Branding, Brand Loyalty and Brand Equity

P. Antony George

ABSTRACT

Branding has been widely recognised as a powerful marketing strategy for successful marketing of products with more customer orientation. However some empirical studies show that generally consumers dislike shallow brand refinement and brands that are mere commodities with emotional packaging. Consumers seek trustworthy brands that offer core problem-solving benefits which satisfy their needs, and wants. This research study endeavours to diagnose some realities behind branding by empirically conceptualizing and measuring consumers attitude/perception on branding, brand loyalty and brand equity. The findings of the study suggest that consumers have preference for branded products but they have a balanced and judicious approach in selection of brands. Results suggest that consumers have a feeling that branded products are very useful in identifying products and for guaranteed quality of products. However the results also suggests some negative feelings of consumers about brands. The results of brand loyalty reveals that majority of consumers exhibit medium level brand loyalty and if the marketer fails to reciprocate the loyalty they can not sustain the patronage of consumers in the long-run. The empirical measurement of brand equity of selected brands reveals that brands that offer more benefits in terms Affinity factors and Functional Performance factors have higher brand equity. The results of the study is a clear signal to marketers/brand managers to internalize the real feelings of consumers on branding and core benefits in brands to build-up powerful brands that can command the recognition and patronage of target consumers.

An Empirical Model for Analysing Consumer's Perception/Attitude on Branding, Brand Loyalty and Brand Equity

Introduction

Branding is so fundamentally important for successful marketing of products to target consumers as numerous competing brands proliferate in the highly competitive and complex modern market in the post liberalization period. Result of studies of FMEG brands and PIMS study shows that the biggest factor for high profitability is market share and successful brands is the prominent factor for achieving decent share in the market. The best strategy to enhance profitability and growth is to focus on brand differentiation rather than on cost and price of products. According to Peter Doyle et. al. (1989) a world renowned researcher in branding, brands with market share of 4 percent generate 3 times the return on investment in comparison with unbranded products with same market share. However, in the modern marketing environment characterized by fast changing consumer behaviour, the traditional branding practices and strategies may be ineffectual in achieving the marketing goals of maximizing consumers satisfaction, consumers retention and better market penetration and overall prosperity and well being of business and society. According to a study (Financial Times, 10th December, 1999) consumers are extremely irritated by plethora of branded products that make even purchase of low involvement products into cheap and unnecessary drama. This research paper endeavors examine the above mentioned branding issues in broad empirical perspective to find some fruitful results to strengthen and refine branding for prosperity of business firm and society.

Need for and Significance of the study

The paradigm shift in the consumer behaviour and emerging trends in the modern marketing environment triggered serious empirical investigation and marketing surveys in the field of branding Literature review showed that there are some scholarly studies in this area which divulged valuable clues on the branding. However there is need for continuous research and investigation in the field because the findings of the studies become irrelevant and outdated when new trends and changing priorities technological and marketing innovations emerge.

Analysis of past empirical studies on branding suggests certain research gaps in this area. The influence of branding on consumers purchase decision, the brand loyalty pattern of consumers, empirical measurement of brand equity etc. are some research gaps found in the empirical literature on branding. Hence this research study on branding has been formulated and executed with a specific thrust on consumer purchase behaviour to diagnose perception and

attitude of consumers on branding the associated with this issue that may be useful to both marketers and consumers and to conceptualise and measure brand loyalty and brand equity by adopting a behaviouristic approach in the study.

Statement of the Problem

Academicians, researchers and technical marketers agree that successful branding is inevitable for better marketing of all categories of products. However the pertinent question is how do Consumers perceive the brand practices and strategies and whether Consumers reactions to branding are positive and encouraging in establishing long term sustainable relationship with Consumers and marketers. Do marketing people practice what has been assumed to be “correct” marketing of brands or following the right approach? The present study attempts to address the following questions of this research problem.

- (a) How do and the manner in which consumers perceive the branding strategies and practices?
- (b) Whether consumers' show significant degree of the brand loyalty towards their favourite brands?
- (c) How do consumers perceive and value the performance of different competing brands?

These questions are circumscribed around the nucleus of the research problem that aims to study the impact of branding strategies on consumer behaviour. Thus the following title for the research study had been determined so as to reflect the main issues of the research problem.

An Empirical model for Analysing Consumer's Perception / Attitude on Branding, Brand loyalty and Brand Equity.

The objective of the research study is framed in the high of above research problem and specific questions derived to find answers.

Objectives

1. To conceptualise and measure examine consumers perception and attitude towards branding and its impact on consumers purchase behaviour.
2. To measure the degree of brand loyalty of different Consumers segment and to diagnose various clusters of consumers on the basis of loyalty pattern.
3. To measure and analyse the brand equity of some popular brands by employing quadrant analysis.

Hypothesis

The hypotheses developed for the study are

1. There is significant correlation between brand awareness and usership status and brand attitude.
2. The mean loyalty of different clusters of consumers is not same.
3. There is no significance difference in the brand equity of different competing brands.

Literature Review

In literature review, empirical studies conducted on the different dimensions of branding with thrust on the issues addressed by this study are examined. Research studies that are directly related to the present study discussed in detail and only main highlights of other related studies are presented.

Some outstanding studies conducted by David et. al. (1990), James et. al. (1981), David (1997) , Walter (1983), Barnard et. al. (1990) , Kevin (1993), Whan et. al. (1996), Vijay et. al. (1997) on branding practices and strategies of business firms in respect of both durable and nondurable products were thoroughly examined in the literature review . The main thrust of these studies is the evaluation of brand extension practices of some reputed corporate in enhancing their brand equity the market share. This studies employed innovative empirical measurement tools or measuring brand equity brand loyalty and brand practices. In fact the findings of the studies are very valuable for new researchers the area of branding and marketers who want to chalk out branding strategies in a professional way.

The findings of the research studies helped the researcher to diagnose research gaps in the area of branding and to compare and test the authenticity of results of the present's study with the results of the other research studies by other well known researches.

Methodology

A suitable methodology had been formulated to execute the study with maximum objectivity, empirical focus and economy. The main highlights of the methodology are:

Sample Design

The Universe of the study was a consumer of durable and non-durable products and respondents were selected from Consumers from selected region in the State of Kerala. Sample unit consisted of both men and women within the age group of 20 to 75 years.

The source list / sample frame was prepared from the list of consumers prepared from the list of consumers furnished by marketers. Respondents were selected from sample frame on random basis for the collection of primary data.

The size of the sample was determined after considering the nature of universe, level of data to be collected, standard of accuracy and availability of finance. Precision rate and confidence level approach had been employed for determining sample size.

For this purpose the acceptable error was determined as + 0.1 (The range of values of interval data was 1 – 10 at 95 percent confidence level).

Thus the sample size was calculated as $n = \frac{z^2 \cdot \sigma^2}{(0.1)^2}$, $n = \frac{(1.96)^2 (4.5)^2}{(0.1)^2}$, $n = 77.79$

Say78 Here $\sigma = \frac{\text{Range}}{2}$, $\sigma \leq \frac{10-1}{2} = 4.5$

To get more accurate results sample size has been enhanced to 100 for the study.

Method of Data Collection

The primary data had been collected through sample survey by employing questionnaire. Interview with marketing experts and consultant was conducted for the collection of information on branding strategies and practices.

Secondary data had been collected from report of marketing survey conducted by marketers, dissertation, research journals, C.D. Rom, Internet Marketing, Magazines published/unpublished research report.

Research Instruments

(a) Questionnaire

Questionnaire had been employed in sample survey for the collection of primary data on consumer's perception attitude on branding loyalty pattern and brand valuation.

(b) Interview Schedule

Interview Schedule was employed for the collection of data from marketing experts, marketing researchers on marketing strategies and practices of business houses.

(c) Show card

Show card with card name and emblem were employed to measure perceived brand awareness and recognition by consumers.

Selection of Brand (Procedures)

At first phase 50 leading brands in India were selected on the basis of previous marketing studies (1) A & M and MARG (2) Economic Times (Brand Equity studies) (3) Business Week (The 100 top Brands) and in consultation with marketing experts, consultants and researchers. Then panel of expert was requested to select 7 brands out of the list prepared for measuring brand equity. The brand values of 7 brands were calculated on the basis of quadrant analysis. (Both affinity quadrant and functional performance quadrant are employed).

Brand Equity – Method of Valuation

Overall index in terms of Affinity Quadrant Analysis and Functional Performance Quadrant Analysis had been employed for measuring brand equity.

$$\text{Brand equity} = \left[\frac{\sum IR_{af} PV_{af}}{\sum IR_{af}} \right] + \left[\frac{\sum IR_{fp} PV_{fp}}{\sum IR_{fp}} \right]$$

Where IR_{af} Stands for Importance Ratings for Affinity Factors

PV_{af} Stands for Performance Value of Affinity Factors

IR_{fp} Stands for Importance Rating for Functional Performance Factors

PV_{fp} Stands for Performance Valuation of Functional Performance Factors

Loyalty Pattern

Since direct questions to measure brand loyalty might evoke self-perception loyalty pattern test had been conducted to measure the degree of loyalty of Consumers. The empirical clues and suggestion to frame the test are collected from research study and theoretical literature Fry JN (1973) Palmer et. al. (1994). This test to a certain extent ensured spontaneous responses from subconscious mind of Consumers.

Loyalty Pattern Score and its Significance

Consumers loyalty pattern has been measured on the basis of total score they get from the test. For this purpose Questions – 11, 12, 13 are provided with different options. The allocation of score for different options is given below.

Table No. 2
Loyalty Pattern – Allocation of Score

| Questions & Options | Score | Question & Option | Score | Question & Option | Score |
|---------------------|-------|-------------------|-------|-------------------|-------|
| Question No.11 | | Question – 12 | | Question-13 | |
| First Option | 1 | First Option | 7 | First Option | 1 |
| Second Option | 2 | Second Option | 5 | Second Option | 2 |
| Third Option | 8 | Third Option | 3 | Third Option | 3 |
| Fourth Option | 5 | Fourth Option | 2 | Fourth Option | 5 |
| | | Fifth Option | 1 | | |

Maximum score a Consumer would get from the test was three (If first option of question No.11 and 13 and last option of question No.12 were selected) and maximum score would be twenty (If last option of Question No.11 and 13 and first option of question No.12) were selected)

1 – 5 Points (5 inclusive)

Consumers who scored between 1–5 showed little sustainable loyalty to any brand. They used to switch over from one brand to another brand in search of extra benefits from products.

Six to Ten Points (10 inclusive)

Consumers who are in this category have some loyalty towards brands but shift from one brand to another if better opportunities are available.

Eleven to Fifteen Points (15 inclusive)

Consumers whose total score is between 11–15 have loyalty towards their favourite brands. Generally they show sustainable loyalty to more than two brands and dislike to favour competing brands.

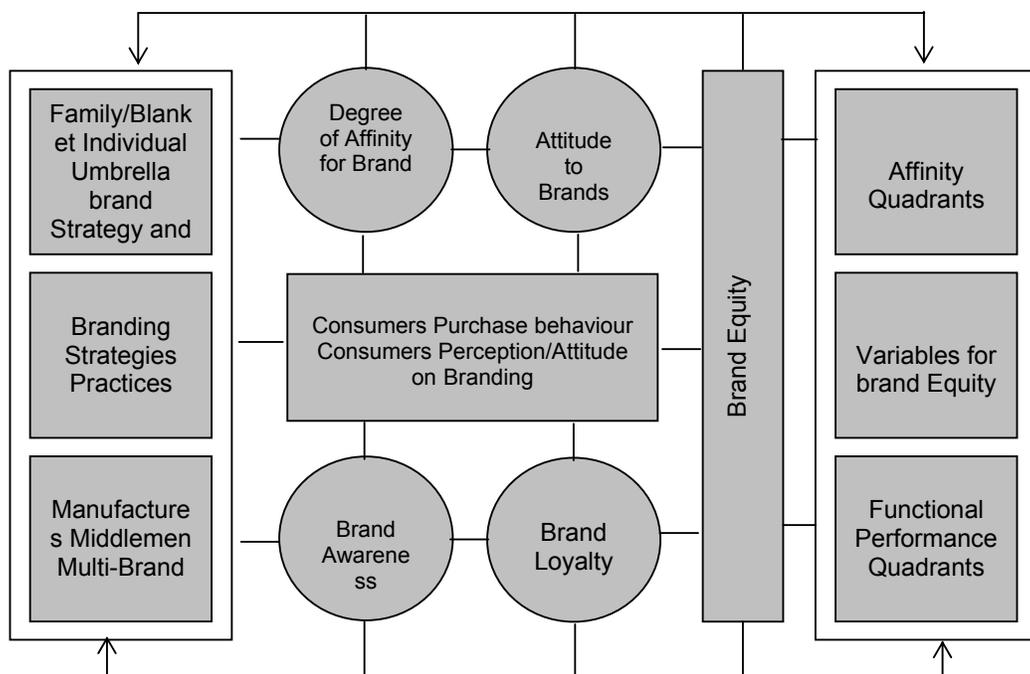
Sixteen to Twenty Points

Consumers who score between 16–20 have the highest degree of loyalty towards favourite brand. They prefer to purchase only branded products and strongly resist change of their favorite brands.

Conceptual & Empirical Framework for the study

A conceptual and Empirical framework for the study had been framed to conduct the study with maximum conceptual clarity and empirical focus. The variables derived from the research problem are integrated in a sequential order to design the framework. The schematic presentation of the framework is presented below:

**FIG. No. 2
Conceptual/Empirical framework of the Study**

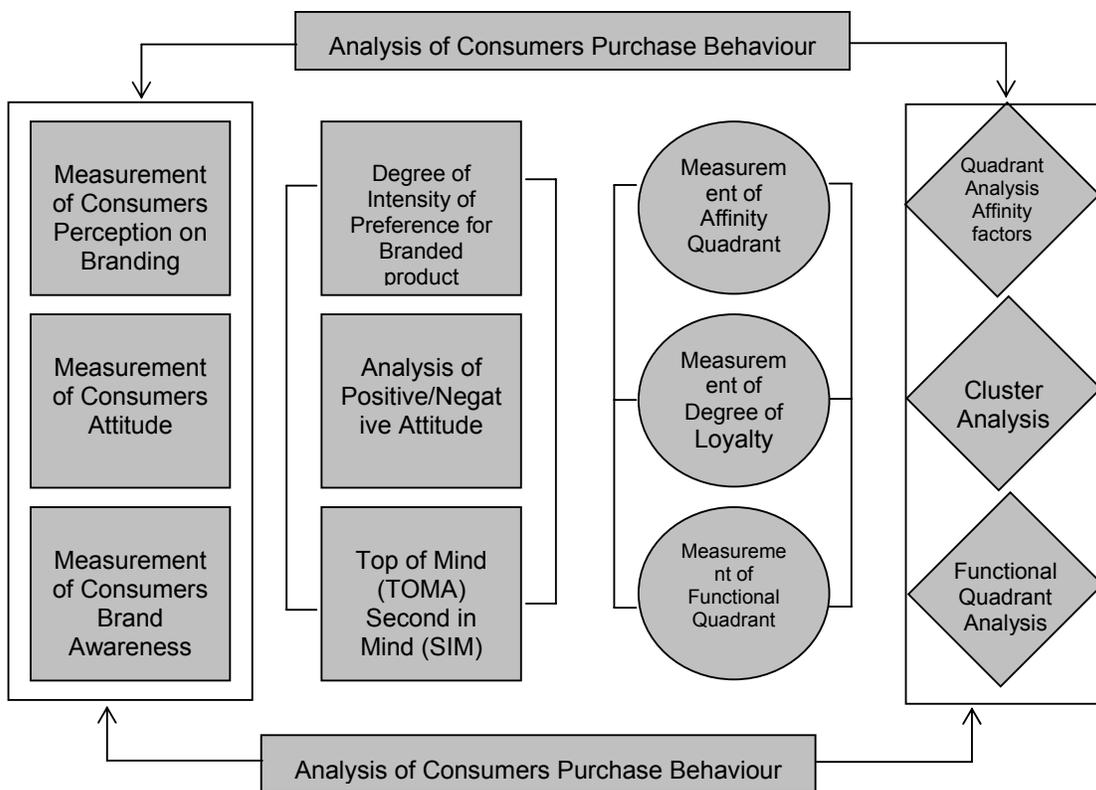


The figure depicts the variables and concepts employed in the study in any integrated framework. These variables have direct link to the objectives framed for the study and hypothesis developed. Therefore detailed discussion the framework may be superfluous.

Analytical Framework of the study

For the statistical analysis of data collected, an analytical framework was also formulated to find out different statistical measures in respect of variables. This frame was developed to restrict statistical analysis to the main research issue by avoiding deviation to issues not related to research problem.

**FIG. No. 3
Analytical Framework of the study**



Analysis of Consumers Purchase Behaviour

Measurement of different variables associated with research problem and quantitative and statistical analysis of these variables to find results are presented in the figure in a total perspective. To enhance the reliability of results different measures of descriptive statistics and inferential statistics had been employed appropriately.

Analysis Design

An appropriate descriptive and inferential statistical analysis had been designed in consultation with statisticians to analyse and interpret data. Means, standard deviation, correlation etc. were the descriptive statistical measures employed and test and other significance tests were inferential statistical measures were employed for this purpose.

Validity and Reliability of Measurements

To ensure validity of measures employed in the study the questionnaire had been pre-tested before administering to respondents. To test the validity of the measures face validity and content validity tests were employed. To ensure the reliability of measure test-retest reliability method had been employed.

Table No. 4
Summary of the Research Methodology

| Research topic / Tile | An Empirical Model for Analysing Consumer's Perception/Attitude on Branding, Brand Loyalty and Brand Equity |
|---|--|
| Research approach | Both Quantitative and Qualitative |
| Research method | Survey Method |
| Type of Survey | Sample Survey |
| Universe of the study | Consumers of Durable & Non-Durable Products |
| Sampling Design | Random Sampling |
| Sample frame | List of Consumers supplied by Marketers |
| Method of Data collection | Questionnaire, Interview |
| Place of study | Selected regions in the State of Kerala |
| Scaling Technique | Multi-Dimensional Comparative Rating Scale |
| Descriptive Inferential Statistics | Mean, standard Deviation correlation T-test etc. |

Thus, an appropriate methodology had been formulated in consultation with statistical experts keeping in mind the qualitative nature of research. To enhance the reliability of results statistical package of S P S S had been also employed for cluster analysis and some other complex statistical analysis.

Results and Discussion

The results of the research study on the basis of analysis and interpretation of data are presented here as answers to research problem in a sequential order keeping in mind the objectives of the study.

Influence of Branding on Consumers Purchase Decision

The first portion study focus on the influence of branding practices and strategies on the purchase decision of consumers. The section also investigated the perception and attitude of consumers towards different brands and related dimensions of branding influencing the consumer behaviour. The main thrust of this analysis is examined how does branding influence

the consumers in their purchase decision and to ascertain to what extent consumers show interest / inclination to purchase branded products. Analysis of consumers perception and attitude on branding and the role and importance of branding in marketing affinity and performance quadrant analysis valuation of brand equity are main dimensions of the discussion.

Intensity of Brand Affinity

The degree of intensity of liking for branded products had been measured to ascertain degree of liking of consumers for brands in purchase decision. The mean value of liking for brands at different levels calculated from related variable is illustrated in the following Table.

Table No. 10
Intensity of Brand Affinity in Purchase Decision (at 95% Confidence level)

| Sl. No. | Levels of Liking | Sample | Mean value | Std. Error | Confidential Interval |
|---------|----------------------|--------|------------|------------|-----------------------|
| 1 | Strong Affinity | 15 | 8.4 | 0.283 | 8.936 – 7.814 |
| 2 | Less Strong Affinity | 19 | 7.2 | 0.274 | 7.728 – 6.672 |
| 3 | Moderate Affinity | 39 | 6.1 | 0.244 | 6.568 – 5.632 |
| 4 | Low Affinity | 18 | 4.3 | 0.234 | 4.748 – 3.852 |
| 5 | Very Low Affinity | 9 | 3.2 | 0.225 | 3.638 – 2.762 |

Source: Primary Data.

Consumer's degree of brand preference shows that 34% of consumers are at the first two levels of affinity. 39% exhibit moderate inclination towards branded products with a mean value of 6.1 per cent and 18% have low affinity with a mean value of 4.3. Only 9% of consumers show very low affinity towards branded products in purchase decisions.

Attitude and Perception of on Branding - Positive Attitude

The attitude and perception of Consumers on branding had been measured in the survey on the basis of response to battery of statements on different variables that were employed to measure attitude. Math-Dimensional rating scale was used to derive values. The following table shows intensity of positive attitude towards branding.

Table No. 11
The Intensity of Positive Attitude to Branding Consumers
(Mean Value – 95% C.I.)

| Sl. No. | Variables value | Mean | Std. Error | Confidential Interval |
|---------|-------------------------------|------|------------|-----------------------|
| 1 | Product Identification | 8.7 | 0.285 | 9.253 – 8.147 |
| 2 | Guaranteed Quality | 8.2 | 0.254 | 8.678 – 7.722 |
| 3 | Fixed Price | 8.4 | 0.234 | 8.847 – 7.953 |
| 4 | Prestige & Pride | 7.8 | 0.213 | 8.206 – 7.394 |
| 5 | Quiet Redressal of Complaints | 4.5 | 0.225 | 4.925 – 4.072 |

Source: Primary Data.

The table clearly suggests that consumers have highly positive attitude on some of the generally accepted positive dimensions of branding. Consumers strongly believed that the branded products are very helpful in identifying right products because this variable with a mean value 8.7 has the highest score. Similarly, for consumers, branded product guarantees quality and standard of the product and on account of this the mean value of the variable is also high (8.2). Other variable measuring the intensity of positive attitude towards branding also have high mean value except for the variables on quick complaint redressal of branded product about which consumers do not have very positive feeling.

Intensity of Negative Attitude towards Branding

The negative attitude of consumers towards branding was also measured by employing suitable variables. The mean values of different variables that are employed to measure negative attitude is given below:

Table No. 12
Intensity of Negative Attitude
(Mean Value – 95% C.I.)

| Sl. No. | Variables Value | Mean | Std. Error | Confidential Interval |
|----------------|--|-------------|-------------------|------------------------------|
| 1 | Creation of Monopoly | 8.2 | 0.278 | 8.756 – 7.644 |
| 2 | Discourage Selection of Quality products | 5.3 | 0.165 | 5.630 – 4.970 |
| 3 | High Price | 6.5 | 0.221 | 6.922 – 6.018 |
| 4 | Inferior Products | 7.3 | 0.253 | 7.126 – 6.794 |
| 5 | Creation of confusion | 4.7 | 0.223 | 7.126 – 6.274 |

Source: Primary Data

Table indicates high degree of negative attitude of consumers towards brands in respect of first variable. With high mean score of 8.2 consumers strongly agreed that brand would create monopoly. Similarly the possibility of marketing of inferior products by using the name of popular brand is also viewed as a serious drawback of branding by consumers (Score: 7.3). However the low mean score of 4.2 for the fifth variable shows that proliferation of too many brands does not create much confusion for consumers in purchase decision.

Branding Loyalty

Successful branding strategies should produce brand loyalty, which is reflected in the repeat purchased brands by consumers out of a commitment to the brand. Sometimes the repeat purchase of consumers is merely 'inertia purchase' without any brand loyalty. The consumer may keep buying a brand because of its availability in a shop at convenient location. Therefore the reality behind the repeat purchase should be brought out which is not possible by using ordinary look and technique. A thorough scientific investigation to understand the degree of commitment of consumers in their subconscious mind and conscious mind towards brand is very

essential to bring to light the real story of brand loyalty. To achieve this in an effective way, a behavioural approach had been adopted in this research study. As explained in the methodology, a brand loyalty pattern test was included in the questionnaire to test the degree of brand loyalty so as to above consumer's self-perception on brand loyalty.

The results of the study on the degree of loyalty of consumers towards their favourite brands are presented below. The table illustrates the different score range of consumers and the different cluster of consumers emerging on the basis of degree of loyalty.

Table No. 13
Brand Loyalty Pattern and Clusters
(Mean Value – 95% C.I.)

| Brand Loyalty (Range of score) | Clusters (Group of Consumer) | Sample size | Mean same | SE | Confidential Interval |
|---------------------------------------|-------------------------------------|--------------------|------------------|-----------|------------------------------|
| 4 to 5 | Brand Switching Price Conscious | 19 | 4.2 | 0.231 | 4.662 – 3.738 |
| 6 to 10 | Brand-shifting Quality Conscious | 35 | 8.7 | 0.268 | 9.117 – 8.283 |
| 11 to 15 | Brand-Centric calculative | 31 | 12.8 | 0.314 | 13.394 -12.206 |
| 16 to 20 | Brand-Centric Prestige seeking | 17 | 15.5 | 0.342 | 16.118 - 14.882 |

Source: Primary Data.

The table clearly indicates the brand loyalty pattern of consumers in terms of score on degree of brand loyalty. 17% of the consumers have high degree of brand loyalty and always prefer to buy branded products and 31% are also brand-centric not so intensive. 35% scored between 6 to 10 that reflect low degree of brand loyalty and brand loyalty of 19 % is very low and prefers to buy product without any consideration for branded products.

Brand Loyalty Pattern-Cluster Analysis

Cluster analysis is employed to classify consumers on the basis of loyalty pattern and to analyse the distinctive characteristics of Consumers. The basic objective of cluster analysis is to determine how many mutually exclusive consumers groups, based on the similarities of profiles really exist in the population and then to state the composition; of such groups. A fairly good number of questions to collect the maximum data on variables to conduct cluster analysis were incorporated in the questionnaire. The highlights of cluster analysis are presented in the following table.

Table No. 14
Cluster Analysis – Brand Loyalty Pattern

| Clusters | Principal Benefits Sought | Demographic Characteristics | Distinctive Characteristics | Purchase Behaviour | Level of Loyalty |
|--|--|--|---|--|---|
| Brand switching price conscious | <ul style="list-style-type: none"> ▪ Low price ▪ Costless service ▪ Extra benefits ▪ Convenient location ▪ Offers & incentives | <ul style="list-style-type: none"> ▪ Lower Middle Class & Lower Class ▪ Large Family Size ▪ Low Education ▪ Below Average Income/old age ▪ Females | <ul style="list-style-type: none"> ▪ Price Sensitivity ▪ Demanding ▪ Least importance to Quality ▪ Quick Decision | <ul style="list-style-type: none"> ▪ Quick Purchase Decision ▪ Negative attitude towards Brands ▪ No Serious thinking on Purchase ▪ No preference for Branded Products | Switching Loyal (Switch over from one Product to another) |
| Brand shifting quality consumers | <ul style="list-style-type: none"> ▪ Medium price ▪ Medium quality ▪ Prompt service ▪ Individualised attention ▪ Reputation of business ▪ Informative advertisement ▪ Convenient retail outlets | <ul style="list-style-type: none"> ▪ Middle class ▪ Average income ▪ College education ▪ Govt. - semi govt. Employees ▪ Middle aged ▪ Medium family size | <ul style="list-style-type: none"> ▪ Less price conscious ▪ Quality conscious ▪ Loyal to retailers ▪ Group oriented selection of products ▪ Seeking functional qualities of brands | <ul style="list-style-type: none"> ▪ Quick purchase decisions for low insolvent product ▪ Some preference for branded products ▪ Simultaneous selection of brands and retail outlet | Shifting loyalty (Shift from one brand to another) |
| Brand – centric calculative consumers | <ul style="list-style-type: none"> ▪ Superior quality ▪ Quick & prompt service ▪ Prestige of brand ▪ Consistent quality & service ▪ Distinctiveness of brand | <ul style="list-style-type: none"> ▪ Lower upper class ▪ Above average income ▪ White collar employees ▪ College education ▪ Medium/small family sizes ▪ A business men | <ul style="list-style-type: none"> ▪ No price sensitivity ▪ Quality consciousness ▪ High preference for reputed brands ▪ Loyalty to retail outlet ▪ Seek affinity qualities | <ul style="list-style-type: none"> ▪ Calculative purchase decisions ▪ Strong preference for brand of product ▪ Serious thinking on purchase ▪ Use of credit card in purchase | Soft – core loyalty loyal to some brands |
| Brand-oriented prestige seeking | <ul style="list-style-type: none"> ▪ High quality ▪ Personal care ▪ Respect and reputation of brand ▪ Responsiveness ▪ Prestigious pricing ▪ Very prompt and transparent service ▪ Prestige of brands | <ul style="list-style-type: none"> ▪ Upper class ▪ High income ▪ Professionals ▪ Top executives ▪ Large businessmen ▪ Landed proprietors ▪ Middle aged ▪ Small family size ▪ High education | <ul style="list-style-type: none"> ▪ Quality seekers ▪ Buy only reputed brands ▪ Strong loyalty to favourite brand ▪ High brand affinity | <ul style="list-style-type: none"> ▪ Very positive attitude towards branding ▪ Professional approach in purchase ▪ Use of credit card in purchase ▪ Prefer to buy product from reputed retailers | Hard - core loyalty purchase only favourite brands |

Table 14 presents a descriptive summary of the results of the cluster analysis of brand loyalty pattern of consumers. As per the loyalty pattern test, consumers are classified into four clusters on the basis of degree of loyalty towards brands. Brand switching price conscious, brand-shifting calculation, Quality conscious, Brand Centric calculative, Brand-oriented prestige seeking consumers were the four categories diagnosed in the cluster analysis. Different clusters of consumers are empirically analysed in terms of principal benefit sought, demographic characteristics, distinctive characteristics, purchase behaviour and level of loyalty. Specific attributes and characteristics collected in the survey had been employed to analyse the clusters

in terms of the above criterion. The nature of each cluster is clearly presented in the table by high lighting the main point associated with main criterion of analysis.

Brand Loyalty Pattern - Segment-wise

The loyalty pattern and degree of loyalty of consumers with regard to different demographic and behavioural segment had been analysed to find out the marketing dimensions of this variable more deeply. For this purpose consumers were segmented on the basis age, gender, occupation, social class, education and Income. The degree of brand loyalty of consumers in each category was separately analysed to understand the real differences in the patterns of brand loyalty. The segment-wise analysis of brand loyalty pattern of consumers is presented in the following table.

Table No. 15
Brand Loyalty Pattern – Segment-wise
(Mean Value 95% C I)

| Segments | Sample Size | Degree of Loyalty (Mean Score) | Standard Error | 95% confidential interval |
|--|-------------|--------------------------------|----------------|---------------------------|
| Age Group | | | | |
| 20 – 45 | 37 | 7.4 | 0.324 | 7.998-6.802 |
| 45 – 60 | 34 | 9.5 | 0.298 | 10.044-8.954 |
| Above 60 | 29 | 14.8 | 0.432 | 15.614-13.986 |
| Sex | | | | |
| Male | 53 | 11.4 | 0.298 | 11.926-10.874 |
| Female | 47 | 8.8 | 0.312 | 0.408-8.192 |
| Occupation | | | | |
| Employees | 38 | 10.3 | 0.324 | 10.928-9.672 |
| Businessmen | 12 | 8.2 | 0.283 | 8.746-7.654 |
| Professionals | 11 | 9.2 | 0.245 | 9.662-8.738 |
| Retired | 21 | 11.4 | 0.312 | 11.992-10.808 |
| Self-employed | 18 | 10.4 | 0.273 | 10.808-9.876 |
| Social Class | | | | |
| Upper class | 14 | 11.8 | 0.232 | 12.046-11.554 |
| Upper Middle class | 18 | 10.7 | 0.254 | 11.208-10.192 |
| Middle class | 45 | 9.2 | 0.323 | 9.824-8.576 |
| Lower class | 23 | 8.4 | 0.214 | 8.812 - 7.988 |
| Education | | | | |
| Upto SSLC | 22 | 9.2 | 0.198 | 9.464-8.936 |
| Upto Higher Secondary | 36 | 10.8 | 0.212 | 11.212-10.388 |
| Upto Graduation | 21 | 11.7 | 0.245 | 12.142-11.258 |
| Upto Post Graduation/ Professionals | 21 | 9.4 | 0.234 | 9.823-8.972 |
| Income | | | | |
| Lower upto 1 Lakh | 35 | 8.7 | 0.256 | 9.186-8.244 |
| Middle 1 – 2.5 | 43 | 10.5 | 0.187 | 10.834-10.166 |
| Higher above 2.5 | 22 | 12.6 | 0.234 | 13.038-12.162 |

Source: Primary Data

The loyalty pattern of consumers on the basis of demographic segments shows that the degree of loyalty of consumers differs in tune with difference in age, sex, occupation, social class, education, income etc. High degree of loyalty for aged Consumers male segments; upper

class consumers, high-income group can be clearly understood from the table. Even though high degree of loyalty has not exhibited by different segments of consumers, consumers loyalty pattern show some difference.

Difference in the degree of brand loyalty

The difference in the degree of brand loyalty of clusters is measured through comparative analysis P-values are calculated with regard to different clusters to ascertain whether there is significant difference in the degree of brand loyalty. The comparative table prepared to present P values calculated for this purpose is presented in table.

Table No. 16
Comparison of Degree of Brand Loyalty of Clusters
(P Values at 5% significant level)

| Clusters | Brand-switching Price conscious | Brand-shifting Quality Conscious | Brand-Centric Calculative | Brand-Oriented Prestige Seeking |
|----------------------------------|--|---|----------------------------------|--|
| Brand-switching Price conscious | – | 0.0014 | 0.0053 | 0 |
| Brand-shifting Quality conscious | – | – | 0.0023 | 0.0019 |
| Brand-Centric Calculative | – | – | – | 0.0023 |
| Brand-Oriented Prestige Seeking | – | – | – | – |

Source: Primary Data.

As per Table there is significant difference the degree of brand loyalty of different clusters of consumers since P values in all cases are below 0.05 at 95% confidence level. Therefore second hypothesis that the mean brand loyalty of different clusters of consumers is not same is accepted on the basis of the above results.

Brand Equity - Quadrant Analysis

The brand equity of seven selected brands had been measured in terms of Affinity Quadrant Analysis and Functional Performance Quadrant Analysis. The measures of Affinity Quadrant analysis and Performance Quadrant Analysis were described in the methodology. The methods and procedures of this analysis are discussed below.

(a) Affinity Quadrant Analysis

The analysis has two dimensions

- (a) Importance of affinity factors in deciding brand equity and consumers purchase decision.
- (b) The performance of selected brands in terms of Affinity factors as perceived by consumers.

The importance score assigned by consumers to different affinity factors are presented in the following table.

Table No. 17
Affinity Quadrant Factors Importance Rating
(Mean Value 95% C I)

| Affinity Factors | Mean Score | S.E | 95% C.E | Ranking |
|-------------------------------------|------------|-------|---------------|---------|
| (a) Respectability & Image | 6.7 | 0.135 | 6.958 - 6.442 | 3 |
| (b) Distinctiveness & Individuality | 7.3 | 0.098 | 7.476 - 7.124 | 2 |
| (c) Acceptability | 6.2 | 0.114 | 6.406 - 5.994 | 4 |
| (d) Innovations | 7.8 | 0.082 | 7.948 - 7.652 | 1 |
| (e) Nostalgia & Trust | 5.6 | 0.105 | 5.792 - 5.408 | 5 |

Source: Primary Data.

Importance rating analysis of affinity score as per Table 17 shows that Innovations of brand (sophistication, design and technical excellence) is perceived to be the most important factor (score: 7.8) in deciding the brand equity from the point of view of consumers followed by distinctiveness of brand, respectability, acceptability and finally nostalgia. These, score are used as the weights to be multiplied with the performance score of selected brand on affinity factors for ascertaining brand equity in terms affinity quadrant analysis.

Measurement of Perceived Performance (Score) on Affinity Factors:

The perceived performance of selected brands in respect of affinity factors is presented in the following Table. Here importance ratings are used as weights.

Table No. 18
Brand Equity (Valuation) of Affinity Factors - Perceived Performance of Brands
(95% confidential level)

| Performance Score | | | | | | | | | | | | | | | |
|---------------------------------|----------------------|-----------------|----------|-----------------|----------|-----------------|----------|-----------------|---------|-----------------|----------|-----------------|----------|-----------------|----------|
| Affinity factors | Importance rating IR | Colgate | | Vicks | | Britania | | Godrej | | Philips | | Horlicks | | Surf | |
| | | Perceived value | I.R. P.V | Perceived value | I.R. P.V | Perceived value | I.R. P.V | Perceived value | I.R.P.V | Perceived value | I.R. P.V | Perceived value | I.R. P.V | Perceived value | I.R. P.V |
| (a) Respectability & image | 6.7 | 7.2 | 48.24 | 7.4 | 49.58 | 7.1 | 47.58 | 6.5 | 64.55 | 8.3 | 55.61 | 7.5 | 50.25 | 5.3 | 35.51 |
| (b) Distinctiveness | 7.34 | 5.6 | 40.88 | 6.5 | 47.45 | 6.1 | 44.53 | 6.7 | 45.46 | 7.8 | 43.68 | 6.5 | 47.45 | 7.0 | 51.10 |
| (c) Acceptability | 6.0 | 6.1 | 36.60 | 7.2 | 43.20 | 7.4 | 44.40 | 5.7 | 40.20 | 7.9 | 47.48 | 6.2 | 37.20 | 6.5 | 39.00 |
| (d) Innovations | 7.7 | 5.00 | 38.50 | 4.7 | 36.19 | 6.1 | 46.97 | 8.1 | 62.37 | 8.5 | 65.45 | 6.2 | 47.74 | 6.4 | 49.28 |
| (e) Nostalgia & trust | 5.3 | 8.1 | 42.93 | 6.7 | 35.51 | 7.1 | 37.63 | 7.2 | 38.16 | 7.9 | 41.89 | 7.5 | 39.75 | 6.2 | 32.86 |
| ΣIR | 33.0 | $\Sigma PVIR$ | 207.2 | | 211.9 | | 221.1 | | 233.4 | | 254.2 | | 222.9 | | 207.7 |
| $\frac{\Sigma IRPV}{\Sigma IR}$ | | | 6.27 | | 6.42 | | 6.70 | | 7.06 | | 7.70 | | 6.73 | | 6.29 |

Source: Primary Data.

Brand Equity (In terms of Affinity Quadrant Analysis) = $\frac{\Sigma IRafPVaf}{\Sigma IRaf}$

Where *IRaf* stand for Importance Rating for affinity factors

PVaf stand for Perceived performance value of affinity Factors

The above Affinity Quadrant Analysis and Brand valuations, reveals the clear superiority of the brand Philips (Brand value 7.70) followed by Godrej, Horlicks, Britannia, Vicks, Surf and Colgate. Factor-wise analysis shows that Horlicks secured the maximum score in respect of Respectability, Surf scored maximum for distinctiveness Philips scored maximum for acceptability and innovations and in respect of nostalgia and trust Colgate scored maximum.

Functional Performance Quadrant Analysis (Brand Equity in terms of functional performance valuation)

The Functional Performance Quadrant Analysis measures the real physical benefits derived from the brands as perceived by consumers. As mentioned in the methodology 5 variables are operationalised and employed for measuring the value of brand in terms of functional performance. The functional performance analysis combines two dimensions:

1. How important each of the functional performance factors are driving brand equity: (Importance Rating)
2. How well a brand is perceived to be performing ;on; the performance factors (Valuation of functional Performance factors)

Importance Rating of Functional Performance Factors

The importance ratings that the consumers assigned to different for performance factors used in the analysis are presented in the table. These score are employed to weights to ascertain the value of brands in terms of performance dimensions.

**Table No.19
Functional Performance Quadrant Factors - Importance Rating (IR)**

| | Functional Performance Factors | Mean score | SE | C.I. | Ranking |
|----|---|-------------------|-----------|---------------|----------------|
| a. | Superiority | 8.5 | 0.314 | 9.115 - 7.885 | 1 |
| b. | Economical | 7.4 | 0.235 | 7.861 - 6.939 | 3 |
| c. | Extra Benefits | 6.6 | 0.197 | 6.988 - 6.214 | 4 |
| d. | Responsiveness & Reliability | 7.8 | 0.184 | 8.161 - 7.439 | 2 |
| e. | Non-personal communication | 5.7 | 0.216 | 6.123 - 5.277 | 5 |

Source: Primary Data.

As per the table superiority of brands in providing, core benefits are in the most important factor followed by responsiveness and reliability economical factor, extra benefits and non-personal communication. The lowest rating is secured by non-personal communication, which measure the value of brands in terms of visual and print advertisement.

Measurement of perceived Performance of Brand - Brand Equity in terms of Functional Performance Factors.

The perceived performance of brands in respect of functional performance factors is presented in the following table.

Table No. 20
Perceived Performance of Brands
Brand Equity in respect Functional Performance Factors
(95 % Confidence level)

| Functional Performance factors | Importance rating IR | Colgate | | Vicks | | Britania | | Godrej | | Philips | | Horlicks | | Surf | |
|---------------------------------|----------------------|-----------------|----------|-----------------|----------|-----------------|----------|-----------------|----------|-----------------|----------|-----------------|----------|-----------------|----------|
| | | Perceived value | I.R. P.V |
| 1. Superiority | 8.5 | 7.4 | 62.9 | 7.2 | 53.3 | 6.8 | 57.8 | 6.3 | 53.5 | 8.4 | 71.4 | 6.6 | 56.1 | 6.2 | 52.7 |
| 2. Economy | 7.4 | 6.2 | 45.8 | 6.6 | 48.8 | 6.5 | 48.1 | 7.5 | 55.5 | 7.9 | 58.4 | 6.1 | 45.1 | 6.5 | 48.1 |
| 3. Extra benefits | 6.6 | 6.8 | 44.8 | 6.2 | 40.9 | 5.1 | 33.7 | 7.4 | 48.8 | 7.2 | 47.5 | 6.4 | 42.2 | 5.7 | 37.6 |
| 4. Responsiveness & reliability | 7.8 | 7.5 | 58.5 | 5.8 | 45.2 | 5.5 | 42.9 | 6.2 | 48.3 | 7.4 | 57.7 | 7.3 | 56.9 | 6.5 | 50.7 |
| 5. Non personal communication | 5.7 | 7.2 | 41.1 | 4.6 | 26.2 | 6.3 | 35.9 | 5.5 | 31.4 | 6.7 | 38.2 | 5.8 | 33.1 | 6.4 | 36.5 |
| ΣIR | 36 | ΣIRPV | 221.0 | | 214.4 | | 218.4 | | 237.5 | | 273.2 | | 233.1 | | 225.6 |
| $\frac{\Sigma IRPV}{\Sigma IR}$ | | | 6.14 | | 5.95 | | 6.06 | | 6.54 | | 7.59 | | 6.47 | | 6.26 |

The measurement of brand equity in terms of functional performance factors clearly suggests the superior position ;of the brand Philips with a score of 7.59 followed by Godrej with 6.54, Horlicks-6.47, Surf-6.26, Colgate-6.14, Britania- 6.06 and Vicks-5.95. Factor-wise scores show that in respect of superiority & Economy Philips scored maximum (71.14 & 58.4) and Godrej secured the highest score in respect of extra benefits. The scoring of the Colgate is the highest in respect of responsiveness and reliability and Non-personal communication.

Brand Equity Selected Brand

The overall value of brand equity is ascertained on the basis of weighted average score of selected brand in respect of affinity factors and Functional Performance factors. The brand equity in terms that overall index is presented in the following table.

Table No. 21
Brand Equity (Overall Index in terms of Affinity and Performance Factors)

| | Brands | Affinity Factors (Weighted mean score) | Functional Performance Factor (Weighted mean score) | Brand Equity (AF + PF) |
|----|----------|--|---|------------------------|
| a. | Colgate | 6.27 | 6.14 | 12.41 |
| b. | Vicks | 6.42 | 5.95 | 12.37 |
| c. | Britania | 6.70 | 6.06 | 12.76 |
| d. | Godrej | 7.06 | 6.54 | 13.60 |
| e. | Philips | 7.70 | 7.59 | 15.29 |
| f. | Horlicks | 6.73 | 6.67 | 13.40 |
| g. | Surf | 6.29 | 6.25 | 12.54 |

Source: Primary Data.

Brand Equity in terms of overall index derived from the Affinity factors values and Functional Performance Factors values show that the brand equity of the Philips is the highest (15.29) followed by Godrej (13.60) and Horlicks (13.40) Brand equity of Colgate, Vicks Britania and Surf are in the range 12 – 13 score without any significant difference in their brand equity.

Brand Equity of Selected Brands – Analysis of Difference

The values of brand equity of selected brand are analysed to ascertain whether there is significant different in the brand equity of different brands. The result of the analysis is presented in the following table.

Table No. 21
Difference in Brand Equity of Selected Brands
(P Values at 95 % Confidence Level)

| | Colgate | Vicks | Britania | Godrej | Philips | Horlicks | Surf |
|----------|---------|-------|----------|--------|---------|----------|-------|
| Colgate | 0 | 0.072 | 0.054 | 0.014 | 0.00 | 0.023 | 0.058 |
| Vicks | 0 | 0 | 0.034 | 0.017 | 0.023 | 0.028 | 0.062 |
| Britania | 0 | 0 | 0 | 0.028 | 0.009 | 0.012 | 0.059 |
| Godrej | 0 | 0 | 0 | 0 | 0.031 | 0.052 | 0.007 |
| Philips | 0 | 0 | 0 | 0 | 0 | 0.034 | 0.004 |
| Horlicks | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| Surf | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Source: Primary Data.

From the above analysis of table the third hypothesis that there is no significant difference in the brand equity of the selected brand is accept

Discussion and Managerial Implications of the Study

The meaning of the results presented in the above analysis is discussed below which includes insights based on finding, empirical significance and the practical dimensions of findings and comparison with existing theories. Table-wise discussion in a sequential order is made with focus on academic implications.

As discussed in the introductory part the research study is an attempt to make empirical analysis of consumer's perception attitude towards branding, brand loyalty and brand equity. The main trust of the study is to examine the research problem in a total perspective within a conceptual framework. Branding is one the most important marketing tools for successful marketing of products. The positive effect of branding for product identification by target consumers is also recognised in the field of marketing.

Intensity of brand affinity is very useful information for the marketers in designing branding practices. Even though consumers accept brands on the basis of merits, the intensity of brand affinity is very clear from the percentage of consumers who are in the first two categories.

As market grew and brand proliferated with a variety of proposition and positioning strategies, the shopping styles of consumers are also important. The consumers who have strong brand affinity generally follow brand-conscious shopping style. Such consumers are drawn towards brands, which have lifestyle appeals in addition to promises on quality. On the other hand consumers who have low brand affinity follow novelty-oriented shopping style and prefer to try and experiment with new products, new variants of existing products brands. Therefore marketers may try to measure the intensity of brand affinity to determine the shopping styles, which has been emerging as a strong factor in designing brand strategies.

For successful marketing of the product the marketer should investigate the attitude of consumers toward brand in terms of factors measuring positive and negative attitude. Majority of consumers believes that branding helps consumers for product identification for purchasing quality product at fixed price. The branding that aims real consumer satisfaction will definitely helps consumers to derive such advantages and some leading branded products are providing such benefits. Marketers should view this positive attitude of consumers towards branded products with rationality because some marketers may tempt to exploit positive attitude of consumers. The table-12 is a strong indication against the misuse of branding practices for marketing products. As per this table consumers perceive that there may be possibility of creation of monopoly (score: 8.2) and charging high prices for (score: 6.5) for branded products. Consumers have also a feeling that the marketers may sell inferior goods by using powerful brands (score: 7.3). All these negative feelings are warning to marketers for using the branding very responsibly so that it may be mutually beneficial to both consumer and marketers. The modern marketers who are singularly focusing on building up powerful brand through money power should evaluate the findings cautiously so that their unethical branding practices may not eventually results in the total collapse of business organisation.

In the competitive market where choice of brands is huge, the monogamous brand loyalty is a thing of the past. Today consumers are too powerful and informative to study their experience with their favourite brands and break special bond with brands once they feel that their favourites do not provide what they want. The loyalty pattern described in the table clearly suggests this trends in the current loyalty pattern. Brand-centric Hard-core brand loyal category has 17% respondents or with a sure of 15.5. On the contrary Brand-centric soft-core loyal and Brand-shifting quality conscious categories constitute 64 per cent of total sample size. The marketers sometimes have a wrong belief that consumers can be divided into two distinct group i.e. loyal buyers of their products and loyal buyers of competing brands. Keeping in mind the above assumption the marketers design branding strategies to keep loyal consumers happy and delighted and to attract loyal buyers of rival brand. However other studies also [Ehrenberg (1998), Kapferer (2005)] clearly suggest that brand loyalty in the traditional perspective cannot exist any longer. In modern marketing context brand loyalty implies a type of matrimonial

relationship based on exclusivity. But when the marketer becomes untrustworthy and does not reciprocate the relationship the consumers who have plenty of choices, naturally break the relationship.

Pragmatic branding approach that really wins the trust and appreciation of consumers is the importunate need of marketers and the findings of this study have some wider managerial implications. The theoretical reflections of the findings should be analysed by the marketers in a professional perspective to apply them in practical market contexts.

Managerially speaking, marketers especially brand managers should frame-branding goals in terms of brand awareness level. The TOMA and SIM with regard to brands suggest that consumers have trust and respect for branded products but view branding very cautiously. The analysis of perception/attitude shows that consumers have balanced approach towards branding and rejects brands that do not perform according to their expectation. Many Indian companies especially MNC still have the colonial belief that Indian consumers are “half devil and half-child” and that is reflected in branding strategies. Many leading brands are becoming cosmetic allure without offering any real benefits. Therefore marketers should view the branding more seriously to get rid of untrustworthy approach in branding.

The insightful finding on the brand loyalty pattern is also an eye-opener to marketers, which contract some traditional beliefs of markers on consumer's brand loyalty. The brand loyalty test conducted in the study clearly reveals the conscious and subconscious mind of consumers on brand loyalty, which shows that no longer Indian consumers are blind brand loyalists. Brand that is mere commodities over laid with a bit of design and emotional packaging no longer inspire consumers. Analysis shows that the so-called hard-core brand loyal consumers are very few and in order to sustain consumers, the brand should offer something real and consumers feel like a part of it and identify with the brand.

The conceptualisation and empirical measurement of brand equity also have wider managerial implications to markers to do away with outdated and firm-centric branding strategies. Marketers should examine the importance rating analysis of affinity factors and functional performance factors that are employed for ascertaining brand equity. The changing priorities and attitude of consumers towards branding is clearly revealed in the ranking of these factors. While designing branding practices the marketer should try to develop brand that have a real heart and soul by focusing on factors that are perceived by consumers as very important for successful brands. Brand managers should ensure that their brand has a real compelling story that is rooted in truth and sincerity so that their brand equity may be considerably enhanced. Thus the results of the study suggests that even “Fan brands” without any core benefits may waste resources of the organisations because marketers try to tell a good story about brand that

they do not really have Marketer who remember this in branding will be a consistent winner in marketing.

Conclusion

In conclusion the empirical results clearly shows that consumers maintain somewhat cautious attitude towards branded products and by and large they have appreciation for trustworthy branding practices. Branded products influence the consumers purchase decision but they seek real benefits from brands. The results of the study confirms the relevance and significance; of consumer-focused and trustworthy branding practices for successful marketing. Brand loyalty pattern also shows that consumers exhibit reasonable degree of loyalty to favourite brand. The loyalty test suggests that consumers are loyal and committed to favourite brand if the marketer reciprocates their patronage. Measurement of brand equity confirms that brands that present excellent performance in respect of consumer facing factors can enhance brand equity. Marketing in the post globalised era presents real challenge to business houses that endeavour to market branded product. In fact, consumers feel somewhat guilty in striking hard bargains with organisations offering inferior brands. More importantly they wholeheartedly patronize reliable brand and feel proud and involved in being associated with such brands. Now it is the turn of the marketers to internalize the real feelings of consumers on branding and frame pragmatic branding practice that delight consumers and to make their life happy and meaningful.

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